TECHNOLOGY DEPT.

MAY 15, 1957

61-10

Telephone Engineer

AND MANAGEMENT

THE NATIONAL TELEPHONE MAGAZINE

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FEATURING IN THIS ISSUE

- ★ **PLANNING FOR TOMORROW,** *by Donald C. Power*
- ★ **CHEMICAL BRUSH CONTROL,** *by O. G. Hanna*
- ★ **PLANNING PLANT PRACTICES,** *by T. DeWitt Talmage*
- ★ **WILL YOU ACCEPT THE CHARGES?** *by George Forbes*

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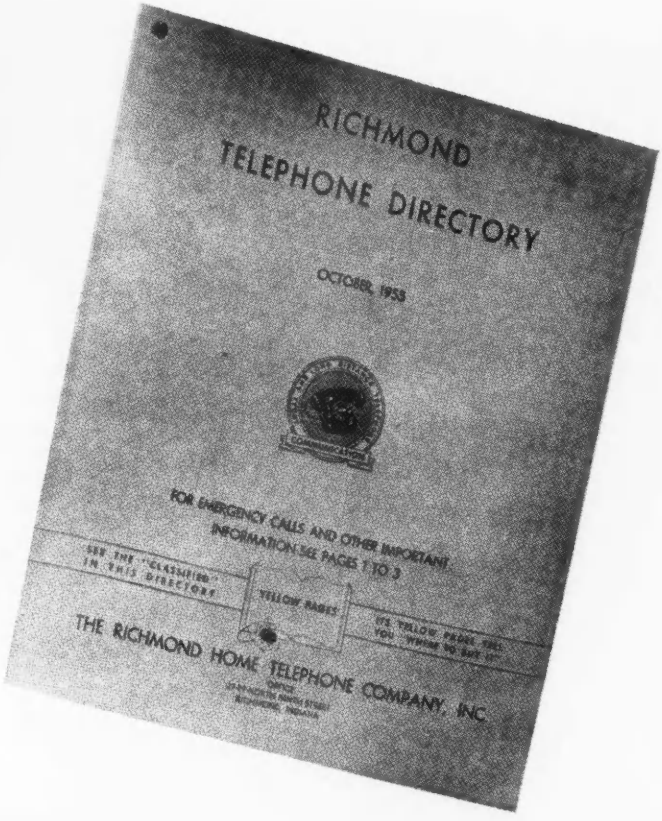

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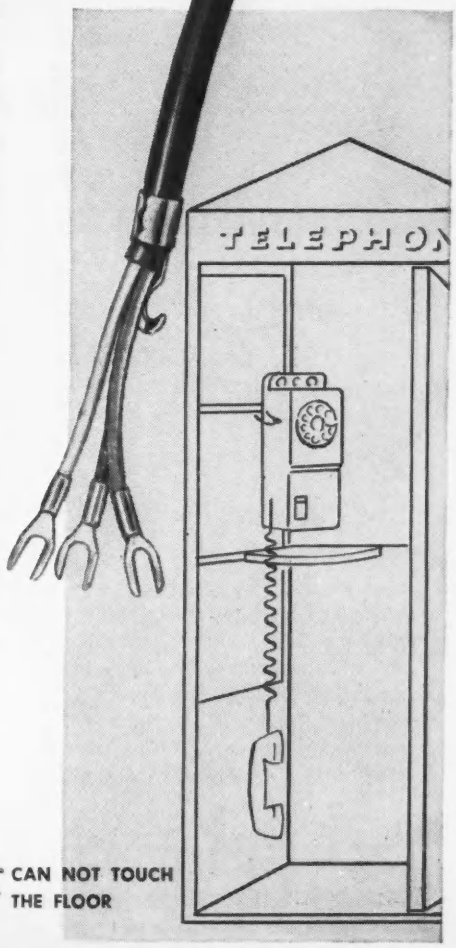

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Ed's out of the doghouse!

Thanks to his telephone company, Ed Jones no longer faces a scene with the wife when he gets home late after a ball game. Paystations, spotted conveniently about town, enable Ed—and scores of other people like him—to call when they want, wherever they want. Result: The telephone company gains incalculable, priceless good will.

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Get the idea? Act today—send for our Survey Simplifier—it will help you pick the best paystation locations. Just address: *Automatic Electric Sales Corporation, 1033 W. Van Buren St., Chicago 7. Or call HAymarket 1-4300.*

AUTOMATIC ELECTRIC

A MEMBER OF THE GENERAL TELEPHONE SYSTEM

ONE OF AMERICA'S GREAT COMMUNICATIONS SYSTEMS

Planning for Tomorrow 43

Addressing the recent convention of the Ohio Independent Telephone Association, USITA President Donald C. Power emphasized that "Tomorrow's progress is today's planning." Due to its important message, we have reproduced the complete text of Mr. Power's address for your careful study.

Chemical Brush Control 50

This timely report summarizes the Bell Laboratories' search for a method of controlling unwanted brush by chemical means — a search that proved some of the new plant-killing chemicals can do an effective job at lower cost than manual methods.

Planning Plant Practices 52

The shortage of technical workers is so great the demand has outrun the supply but many companies are whipping the shortage by using training plans which increase the usefulness, efficiency, and versatility of present employes.

Will You Accept the Charges? 55

When the operator heard Mr. Beelor say "I've got the South Pole on the line," she said to the girl next to her, "Now I've had it. This guy thinks he's Santa Claus . . ." For the rest of a story illustrating the telephone industry's cooperation with the nation's "ham operators" read George Forbes' article on page 55.

Outdoor Booths 59

TE&M's Technical Editor, John S. Reed, concludes his operating manual on "Outdoor Booths" by discussing — (1) directory shelves, (2) half-length outdoor telephone booths, and (3) booth maintenance tips.

Editorial & Business Staff

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Telephone Engineer

AND MANAGEMENT

THE NATIONAL TELEPHONE MAGAZINE

vol. 61 No. 10 **May 15, 1957**

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FRONT COVER

DONALD C. POWER, center, president of General Telephone Corp. and United States Independent Telephone Association, chats with WELDON W. CASE, left, president of Ohio Independent Telephone Association and the Elyria Telephone Co., Elyria, and EVERETT H. KRUEGER, JR., right, Columbus, chairman of the Public Utilities Commission of Ohio, during the Ohio convention luncheon on April 16, at which time Mr. Power was the guest speaker.

Volume 61, No. 10. Published on the 1st and 15th of each month by TELEPHONE ENGINEER PUBLISHING CORP. Office of Publication, Rochelle, Ill. Executive and Editorial Office, 7720 Sheridan Road, Chicago 26, Ill. Telephone — Rogers Park 4-3040. Subscriptions: U. S. and Possessions, $3.00 per year; Canada $3.50; in all other countries, $5.50. Single copies, U.S.A., 50 cents. Entered as Second Class matter at the post office at Rochelle, Ill. under the act of March 3, 1879.

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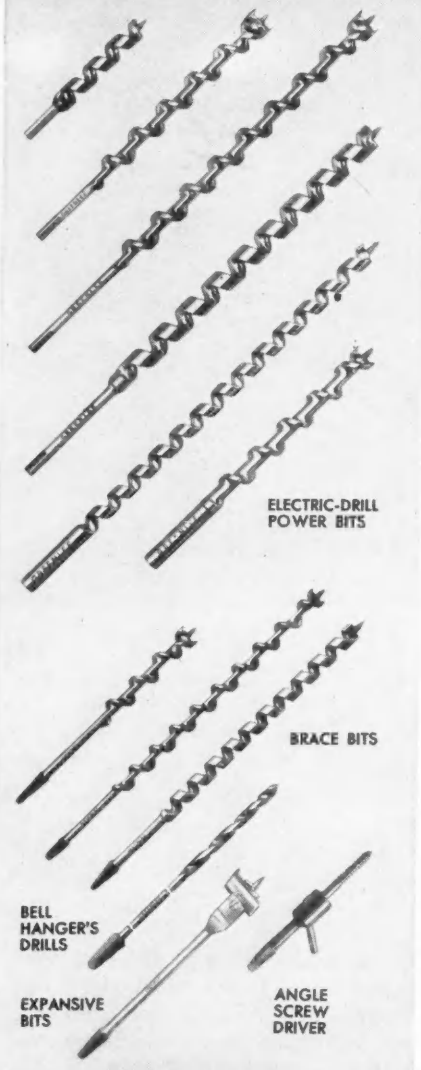
high-quality, long-lived

BORING TOOLS

for pole, crossarm, and timber work . . .



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Whether you need to bore deep or shallow holes, small or large, there is a GREENLEE bit, drill, or auger for the job! Various lengths and styles for electric drill or hand-brace use. All of highest quality materials and correct design for easy boring, clean cutting, and long life under hard usage. Stocked by leading telephone supply distributors . . . see yours or write direct for literature.

Greenlee Tool Co., 2005 Columbia Ave., Rockford, Ill.

COMING CONVENTIONS

WISCONSIN State Telephone Association, Hotel Loraine, May 15-16.

ILLINOIS Telephone Association, Hotel Pere Marquette, Peoria, May 22-23.

KANSAS Telephone Association and **MISSOURI** Telephone Association, Town House Hotel, Kansas City, Kans., May 27-28.

PENNSYLVANIA Independent Telephone Association, Buck Hill Falls Inn, Buck Hill Falls, June 4-5.

MAINE Telephone Association, **NEW HAMPSHIRE** Telephone Association, and **VERMONT** Telephone Association, Wentworth-by-the-Sea Hotel, Portsmouth, N. H., June 4-6.

CALIFORNIA Independent Telephone Association, Ambassador Hotel, Los Angeles, June 5-6-7.

WASHINGTON Independent Telephone Association, and **OREGON** Independent Telephone Association, Davenport Hotel, Spokane, Wash., June 13-14-15.

NEW YORK State Telephone Association, Scaroon Manor, Schroon Lake, June 17-19.

ALASKA Independent Telephone Association, Elks Club, Kodiak, Aug. 26-28.

TENNESSEE Telephone Association, Hermitage Hotel, Nashville, Sept. 12-13.

ARKANSAS Telephone Association, Arlington Hotel, Hot Springs, Sept. 16-17.

MICHIGAN Independent Telephone Association, Hotel Pantlind, Grand Rapids, Sept. 17-19.

ROCKY MOUNTAIN Telephone Association, Hotel Utah, Salt Lake City, Sept. 18-20.

WEST VIRGINIA Independent Telephone Assn., Blackwater Lodge, Davis, Sept. 30-Oct. 1.

NORTH CAROLINA Independent Telephone Association, Carolina Hotel, Pinehurst, Oct. 3-4.

UNITED STATES Independent Telephone Association, Conrad Hilton Hotel, Chicago, Oct. 14-16.

SOUTH CAROLINA Independent Telephone Association, Clemson House, Clemson, Nov. 4-5.

VIRGINIA Independent Telephone Association, Roanoke Hotel, Roanoke, Oct. 24-25.

OKLAHOMA Telephone Association, Huckins Hotel, Oklahoma City, Nov. 21-22.

FLORDIA Telephone Association, The Balmoral, Miami Beach, Dec. 2-3.

"SUPERIOR'S all-plastic cable certainly reduced our maintenance problems.. lets a man relax"

IT'S IRRADIATED!

SUPERIOR TELEPHONE CABLE

Superior Cable contains a tape, marked at one-foot intervals up to 10,000 feet, that guarantees the footage you receive and lets you measure the footage you use.

Contains a polyethylene tape developed by radiation chemistry!*

Install SUPERIOR Telephone Cable for better round-the-clock performance with minimum maintenance.

All-plastic SUPERIOR Cable is irradiated* . . . has double the dielectric strength for far greater lightning protection! Its resistance to moisture, ozone, oils, acids and alkalis makes it ideal for either aerial or direct burial installations! The insulation is "graded" to conductor sizes . . . to closely match the universal transmission standards for loading coils and terminating equipment! The deviation in mutual capacitance is now less than 1½%!

For better round-the-clock performance at less cost, order SUPERIOR CABLE. Available with regular spiral shield (5 mil aluminum) or, in certain sizes at slight additional cost, longitudinal shield (8 mil aluminum).

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For detailed information and price, write

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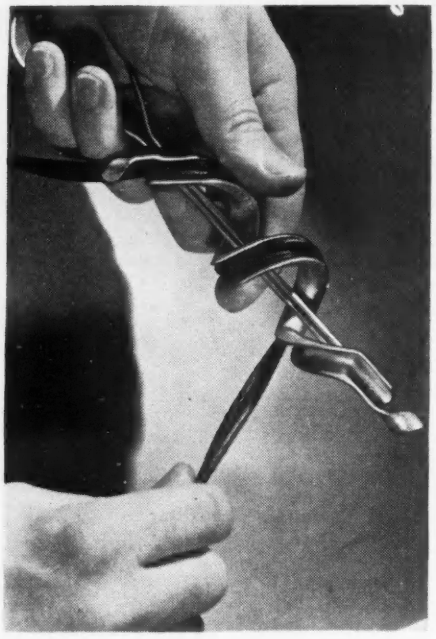
*Irrathene ® irradiated polyethylene film, a General Electric product.



Wire-Saving Snubbing Action . . . with this

KEARNEY

SNUB-R-GRIP DROP WIRE GRIP

On poles or buildings this free-swinging drop wire tie provides a "snubbing" action stronger than the rated strength of the wire. This is possible because the unique spiral grip distributes the pull over a long length of wire. KEARNEY Snub-R-Grips are quickly installed and easily salvaged. Just wrap the wire (twisted pair, parallel or synthetic-jacketed) into the grooved spiral. A portion of the groove's inner surface is specially coated to give maximum non-slip grip . . . without damage to insulation.

For Better Construction . . . Safer Maintenance

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The Open Forum

"Watch Future Issues"

TO THE EDITORS: — ". . . Do you have, for distribution, any copies of "The Dial Hand Test Set as an Effective Tool for Fault Location" by John S. Reed, (*Fortnightly Telephone Engineer*, Vol. 15, No. 7, July 54; Vol. 15, No. 8, August, 1954 and Vol 15, No. 11, Nov. 1954)?

"I would be more than glad to pay you for these back issues if they are still in print. If these issues are out of print or stock I would like to see this article as a reprint in future issues of T.E.&M.'s operating manuals. Your operating manuals and data sheets are the best features of an excellent publication. You and your staff are doing a fine job for all telephone people."

James K. Davidson,
9 Colonial Rd.,
Auburn, Mass.

"Good Job For Skiis"

TO THE EDITORS: — ". . . We enjoyed seeing the picture of my daughter and reading the article in the March 1 issue. I received several letters with interesting comments.

"As a follow up to your letter to me of September 4th, 1956, I enclose a couple of snaps showing we do climb with skiis on — occasionally. Especially when poles are not too high and the snow is deep. In the picture which includes my helper (Russell Whitmer) you can see that the snow is almost up to the top wire of the fence in the background — about 3½ feet. Thank you for your interest in our small outfit."

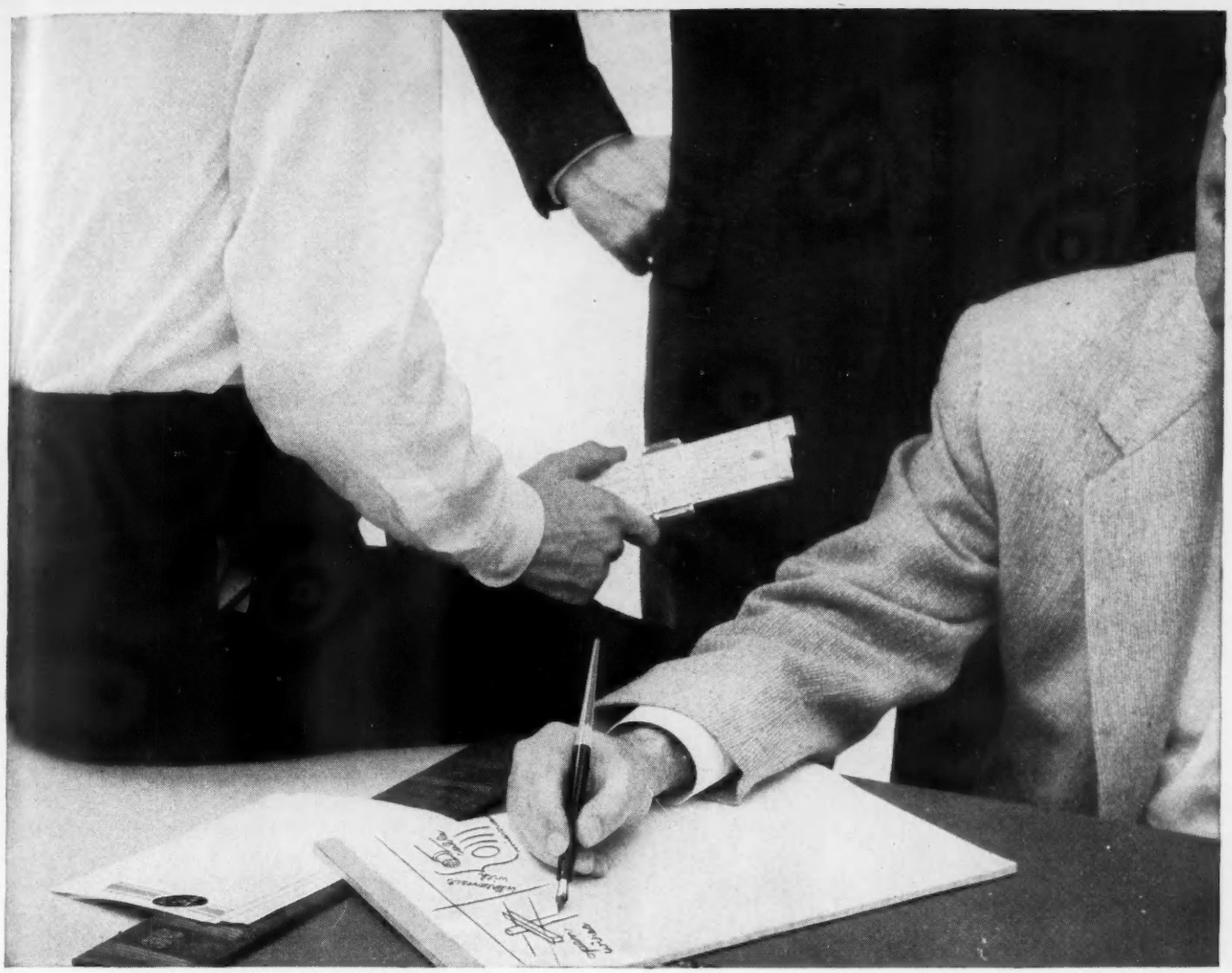
John R. Fetcher,
Clark Telephone Co.,
Clark, Colo.

"Permission Granted"

TO THE EDITORS: — ". . . . In each issue of your fine magazine we read with great interest the column entitled *"The Back of the Book."* The column is filled with extremely interesting anecdotes which, we feel, would be of interest to the employes of our company. Therefore, we would like to obtain your permission to occasionally reprint items from this column in our employe magazine, the California General News. We would, of course, give you full and proper credit for each item reprinted. . . ."

M. C. Strittmatter,
Industrial Relations Director,
General Tel. Co. of Calif.

JOHN R. FETCHER (left) of the Clark (Colo.) Tel. Co. and RUSSELL WHITMER. When poles are not high and the snow is deep, Mr. Fetcher "occasionally climbs poles with his skiis on, as shown above.



how Lenkurt's

INTEGRATED CARRIER CONCEPT can save you money!

There's a brand-new concept in carrier: integration. Now for the first time, carrier-derived telephone circuits can be planned to flow smoothly from open wire to cable to microwave—at carrier frequencies using the same type of carrier equipment!

Consider what this means in *simplicity*—in *better performance*—in *savings!* Expensive back-to-back equipment arrangements to convert carrier to voice to carrier are no longer needed. The result: less distortion, fewer maintenance problems, and a substantially increased range and scope of carrier applications.

Three interconnectible 45-type systems are now available: 45 A (12-channel, open wire); 45 BN (24-channel, cable); and 45 BX (24 to 120-channel, radio). Other systems are under development.

With Lenkurt's "Integrated Carrier" concept, carrier now enters a new, wider stage of usefulness. *Find out about this new concept today!* For detailed literature on 45A, 45BN, and 45 BX carrier, write: Automatic Electric Sales Corporation, (HAymarket 1-4300), 1033 West Van Buren Street, Chicago 7, Illinois. *In Canada:* Automatic Electric Sales (Canada) Ltd., Toronto. *Offices in principal cities.*

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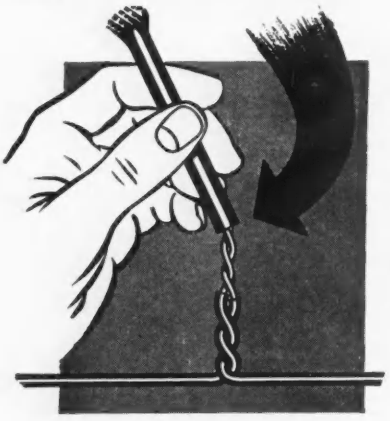
ONE OF AMERICA'S GREAT COMMUNICATIONS SYSTEMS

"Super-Splice"®
makes splices
waterproof
...from
inside out!

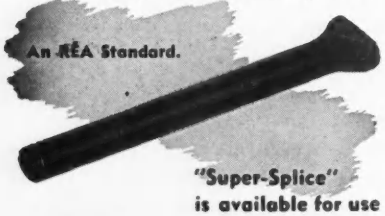


Superior Cable's exclusive economical "Super-Splice" is a plastic splice sleeve. It is sealed at one end and comes to you filled with an insulating and waterproofing compound.*

"Super-Splice" prevents leakage currents and breakdowns in the presence of moisture . . . good for 25,000 v. d. c.

Can be easily removed to re-enter the splice . . . the compound never hardens or oozes out no matter what the temperature.

*A Dow-Corning silicone compound.



"Super-Splice" is available for use with straight, butt or bridge splices.

For further information on economical "SUPER-SPLICE", write

SUPERIOR CABLE
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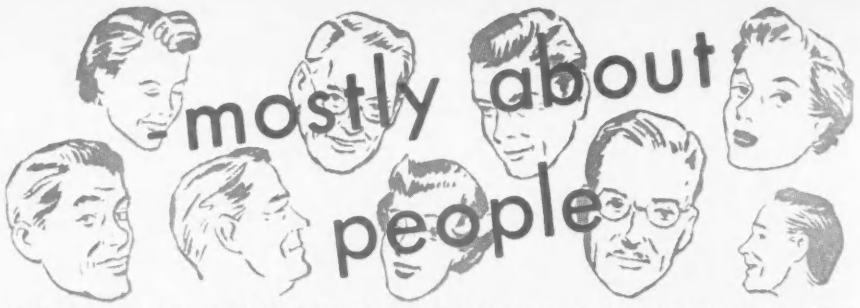

ACROSS THE EDITOR'S DESK

Big Book In The Mail

THE 1957 EDITION of our TELEPHONE ENGINEER'S CATALOG DIRECTORY OF INDUSTRY SUPPLIERS will be mailed during May. This volume has several editorial features that should be of extreme value to all operating telephone companies and people.

In addition to the Catalog-Directory you will find sections on the following subjects: Public Relations Manual; Plant Man's Handbook; Traffic Operating Manual and a complete directory of all of the various telephone associations.

The Editor takes this opportunity to publicly congratulate our Managing Editor *John G. Reynolds,* who serves as Editor of the year book, on an outstanding editorial accomplishment and to our Advertising Manager *Don C. Sorensen,* who with the co-operation of the manufacturers and suppliers to our industry, made the volume possible financially.

"About Folks You Know"

FOLLOW-UP on the ailing: *S. K.* Trippet, president of the Princeton (Ind.) Telephone Co., is recovering nicely from emergency surgery performed in late March. . . . *A. S. Crane* is convalescing at 1901 N. Atlantic Ave., Fort Lauderdale, Fla., following hospitalization for a heart condition. . . . *Foster B. McHenry* is back on the job after a virus infection sidetracked him from his regular duties. . . . *George Morse,* Reliable Electric Co., Chicago, one of the most popular of our manufacturers, is convalescing following major surgery in a Chicago hospital. Cards and letters will reach him addressed to 359 Longcommon Road, Riverside, Ill.

"Bigger and Better"

ATTENDANCE at the state telephone conventions are larger and more enthusiastic than in past years. A number of reasons, besides the phenominal growth of the industry, have been given. However, we think the programs presented have much to do with the increased attendance. This, with the active work of association secretaries and their officers, will do much to strengthen the industry's voice in political councils both state and national. The drive for direct members to USITA is a step that could mean much to the national association and to those smaller telephone companies not heretofore belonging to the United States Independent Telephone Association.

"Safety Course"

COLBY COLLEGE, Waterville, Maine, is offering a one-week course in Industrial Safety in August of this year. A brochure outlining the course scheduled for August 26-31, listing the teaching staff, and supplying other necessary information will be available approximately June 1. $75 covers all charges including living quarters and meals. Write Wm. A. Macomber, Director, Div. of Adult Ed. & Extension.

Mrs. George Scoville

MRS. GEORGE A. SCOVILLE, widow of the late *George A.,* at one time vice president and general manager of the Stromberg-Carlson Co., died at her home in Laguna Beach, Calif., on April 24. She moved to California following the death of her husband in 1940. Thanks to *Norm Howden* of S-C who relayed this information.

Helping to bring people together

Today, Teletype equipment is helping the communications industry serve more people than ever before. Quick, reliable . . . Teletype equipment is speeding progress in countless fields.

For example, business men all over the nation "talk" to each other at the touch of a keyboard . . . press associations send instant news reports to every corner of the land . . . office automation, production control systems, computer centers, all draw on Teletype equipment's ability to transmit and reproduce text and punched tape.

Because of its versatility, Teletype equipment has become an important source of revenue for many communications companies.

If you would like a copy of our booklet, "The ABC's of Teletype Equipment," write to Teletype Corporation, Dept. TEM5, 4100 Fullerton Avenue, Chicago 39, Illinois.

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1957 Golden Anniversary Year

The West Central Telephone Association is located right in the center of what many people consider the best hunting and fishing country in Minnesota. Phillip E. Richards, manager, looks on as one of his men collects coins from one of the Alcoa® Aluminum Outdoor Telephone Booths the company maintains in Sebeka, Menahga and Verndale, Minn.

"FOUR TIMES MORE REVENUE WITH ALCOA BOOTHS,"

Reports Phillip E. Richards of West Central Telephone Association

West Central Telephone Association of Wadena, Minnesota, proved to itself that it really pays to make it more convenient for people to get to a phone. Formerly, vacationers in the resort towns of Sebeka, Menahga and Verndale, Minnesota, had to go to the local telephone office to make calls home, unless there was a phone where they were staying.

Phillip E. Richards, manager, decided to install Alcoa Outdoor Booths in these towns. When he did, revenue shot up to a figure more than four times greater than before. In the month of July, one booth brought in $245.00. Another booth made $1,831.00 its first year.

West Central likes the wide-opening doors of the booths and the internal roominess—about eight square feet of floor space. The shelf provides ample space for packages or handbags. Manager Richards found his men were able to assemble a booth and erect it on the site in about six hours.

"MAINTENANCE IS NO PROBLEM," says manager Richards. "We pay a nominal fee to the people near whose property the booth is installed to provide electricity and maintenance. The only work required is occasional sweeping out with a broom and infrequent washing with soap and water."

"THEY ARE AS STRONG AS A BRIDGE," says Phil Richards. "When I saw how these Alcoa Booths are built, with four corner columns like the box girders on a bridge, I knew they could take it. We had trouble with another booth we tried. These Alcoa Booths are really vandal resistant."

SEBEKA, MINNESOTA — 1956

Jan.	Feb.	Mar.	Apr.	May	June	
107.58	112.05	114.73	184.54	175.87	146.57	
July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
208.06	239.81	183.52	111.14	137.30	109.85	$1,831.02

MENAHGA, MINNESOTA — 1956

Jan.	Feb.	Mar.	Apr.	May	June	
93.49	81.84	65.02	94.29	122.10	165.01	
July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
245.04	190.65	156.00	142.48	133.11	73.76	$1,562.79

VERNDALE, MINNESOTA — 1956

Jan.	Feb.	Mar.	Apr.	May	June	
58.84	46.94	20.98	47.42	49.06	65.45	
July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
74.15	88.79	85.59	73.66	70.05	57.12	$738.05

1955 TOTALS — PRIOR TO INSTALLATION OF ALCOA BOOTHS

SEBEKA — $412.50 **MENAHGA — $361.70** **VERNDALE — $212.00**

"HERE'S HOW MUCH OUR BOOTHS EARN," reports Phillip E. Richards, manager, West Central Telephone Association. "Contrast the totals for the towns of Sebeka, Menahga and Verndale, Minnesota, with the totals at the bottom which show revenue obtained *before* the outdoor booths were installed."

"BOOTHS ARE BRIGHTLY LIGHTED," reports Mr. Richards. "The fluorescent lamps provide a lot of light through the four glass 'Telephone' signs at the top, and through the ceiling on the inside. This is important not only in attracting attention to the booths at night but in making the ladies feel comfortable inside."

ALCOA GOODWILL KITS are furnished with every Alcoa Booth. They contain newspaper mats, publicity releases, free envelope stuffers, radio and TV commercials.

GET MORE INFORMATION ON ALCOA BOOTHS. Write for brochure. And ask your jobber how Alcoa Booths can increase your revenue and build customer goodwill. ALUMINUM COMPANY OF AMERICA, 1691-D Alcoa Building, Pittsburgh 19, Pa.

Your Guide to the Best in Aluminum Value

WE CHOSE ALCOA ALUMINUM MILL PRODUCTS
ALUMINUM COMPANY OF AMERICA
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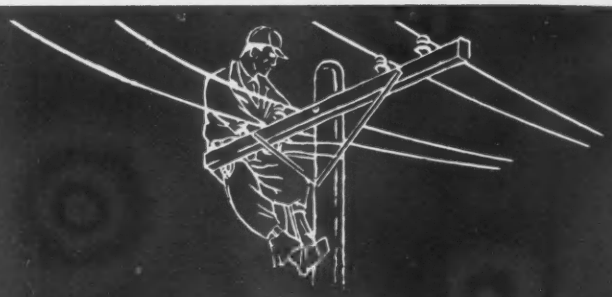
THE ALCOA HOUR • Television's Finest Live Drama • Alternate Sunday Evenings

INDUSTRY NEWSLETTER



REA Announces New Telephone Loan Security Requirements

NEW REQUIREMENTS for telephone loans made by Rural Electrification Administration were announced last month by U. S. Department of Agriculture.

Designed to strengthen government's security for such loans while giving impetus to rural telephone program, new minimum requirements became effective April 19 and will be applied, where practicable, to loans in process.

While greater security for loans is provided in the new policy, less delay on the part of some borrowers in meeting their initial requirements is anticipated.

"In many instances this will advance start of construction and thus expedite our efforts to get more and better telephone service, to farmers," said REA Administrator David A. Hamil. He added that new policy "reflects experience gained by REA and its borrowers in the conduct of the program and is a direct result of our continuing search for ways to improve our policies and procedures."

In determining there is adequate security for loans to all types of telephone borrowers, REA will be guided by five factors or requirements: (1) A reasonable assurance of obtaining the telephone market on which the proposed system design is based; (2) a finding that the proposed system is economically feasible with application of rate schedules that are appropriate for the area to be served; (3) a determination that the experience, community standing, and general reputation of the principal owners and manager of the borrower are satisfactory; (4) a first lien on the borrower's total system or other adequate security; (5) the acceptance of specified managerial and financial controls in the loan security documents to be effective when the REA minimum net worth requirement is not being met.

The policy provides that REA stress the first three of these factors in determining loan security. The agency believes these are essential to the continued successful operation of the borrowers' telephone systems.

In new policy statement REA strongly recommends, as sound management practice, that borrowers build up net worth adequate to assure strong financial structure. It recommends that borrowers set net worth goal considerably higher than minimum loan security requirements stipulated in mortgage.

All mortgages under new policy will prohibit payments of dividends (other than on preferred stock issues, the terms of which have been aproved by REA) or other distributions of net worth when net worth, after distribution, falls below 10 percent of net assets as defined in mortgage. Whenever net worth is below 10 percent REA may exercise certain managerial controls over salaries and fees. In addition, REA may appoint a supervisor for non-profit organizations whenever borrower is in default for 30 days or more an any loan payment.

Non-profit borrowers, such as cooperatives, limited dividend or mutual organizations, must satisfy REA that they have signed up for service at least 70 percent of number of subscribers estimated in loan application. They must also collect at least $10 from each unserved signed applicant.

For loan applications involving acquisition of existing telephone facilities at price in excess of the REA appraisal, both types of borrowers will normally be required to provide new equity funds to cover amount over appraisal. Policy further provides that Administrator may require borrowers to obtain equity funds whenever essential to loan security.

New loan security policy is spelled out in REA Bulletin 321-2, available from Rural Electrification Administration, U. S. Department of Agriculture, Washington 25, D. C.

Manufacturers' Representatives Named to BSDA Task Force

TO STUDY the question of the best approach to utilizing communications inventories in the supply pipeline in the event of an enemy bombing attack, and how this information can be made readily available, the Business & Defense Services Administration of the US Department of Commerce has formed a task force of representatives of the wire communications manufacturing industry.

Because the problem of availability of supplies cuts across the entire industry, it is expected that the committee will eventually be enlarged to include representatives of the operating telephone and telegraph industry.

Named to the committee by BSDA are: A. F. Gibson, Stromberg-Carlson Co., chairman; W. F. Boyd, Kellogg Switchboard & Supply Co.; Lloyd Bender, North Electric Co.; G. K. Beare, Automatic Electric Co.; and V. S. McAdam, Western Electric Co.

They were selected at an industry advisory meeting sponsored by BDSA at which mobilization problems

No unused equipment here! With a Stromberg-Carlson No. 3 Toll Board, you buy the number of positions you need now—whether your toll center is large or small—and add more as your business grows.

Pay only for what you use

Here is a toll board that *grows as your own business grows.*

When you buy a Stromberg-Carlson No. 3 Toll Board, you buy exactly what you need *today.* Then you add positions—one at a time —*as you need them.* You continue to give your subscribers the finest toll service without tying up money in unused equipment.

And that's not the only important advantage you enjoy with this board. Here are a few more:

★ Supervisory and signaling functions are in the line or trunk circuits, instead of in the cord circuit. This arrangement is particularly economical when you have a large number of cords in relation to trunks.

★ For simplified maintenance, no auxiliary contacts are used on jacks.

★ You can remove jack sleeves from the front without disturbing switchboard operation.

★ All equipment for cord circuits, position circuit, and operator circuit is mounted in the switchboard and has been wired and thoroughly tested at the factory.

★ The board can be supplied with keysenders for use with dial equipment. Keysenders provide greater operating efficiency by greatly increasing the sending rate.

To get the complete story on the profit-boosting features of the No. 3 Toll Board, call or write the Stromberg-Carlson representative in your area.

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a good installation calls for a good cord

COMMERCIAL TELEPHONE CORDS

are made better to last longer

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- **NEOPRENE**
- **MERCERIZED COTTON**

- **switchboard cords with or without plugs;**
- **instrument cords; operator's cords;**
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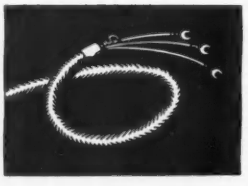


QUALITY CORDS FOR ALL MAKES AND TYPES OF TELEPHONE INSTRUMENTS

Newsletter

(Concluded from page 14)

were discussed. The government agency informed the manufacturers that it is considering a standby order which would permit communications operators to convert automatically all orders on the books of wire communications manufacturers to defense rated orders within 20 days after M-day (the mobilization day in the event of an attack emergency). Thereafter, the manufacturers would receive allotments of controlled materials to meet requirements of their customers.

BDSA also said its Communications Division plans to undertake collection of data on the wire communications manufacturing industry's 1956 consumption of controlled materials, in order to bring consumption figures up to date and establish a more recent base period than the 1952 period now in use.

Congress, however, has posed a question as to whether this or other plans of BDSA will be carried out. The economy-minded lawmakers, in slashing Commerce Department funds for fiscal 1958 have taken dead aim on BDSA. The House, in passing an appropriations bill, cut the BDSA fund by 50% with the proviso that the money could be saved by eliminating all BDSA divisions, numbering 25 and including those in the areas of communications and electronics.

While the Senate had not yet acted on the measure, hearings by one of its subcommittees indicated it was of no mind to restore the money unless some persuasive arguments are heard to cause it to do an about-face.

With the lawmakers paring budget requests for many agencies, another one getting a cutback from the House is the FCC, whose budget was reduced by $650,000 to $8,300,000 in that branch of Congress. FCC officials have warned the Senate Appropriations subcommittee that the whole field of FCC regulated activity will be slowed down if the Commission is not restored the funds cut by the House.

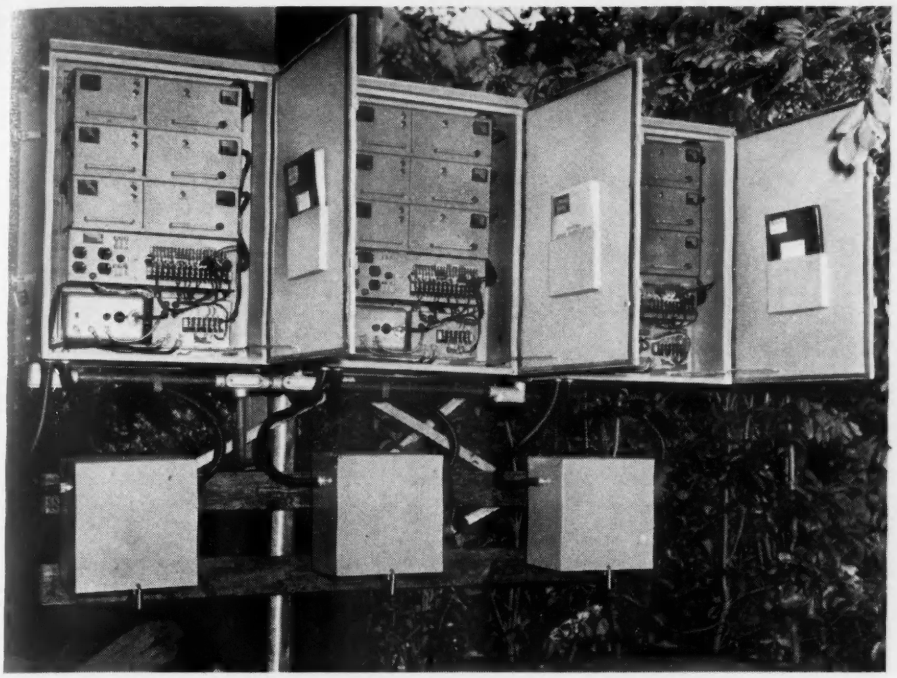
Cost Spread Called "Inequitable"

AN equitable distribution of the telephone cost-bill between state and interstate operations could result in a lowering of state rates, regulatory officials of 11 Southeastern states were told April 4.

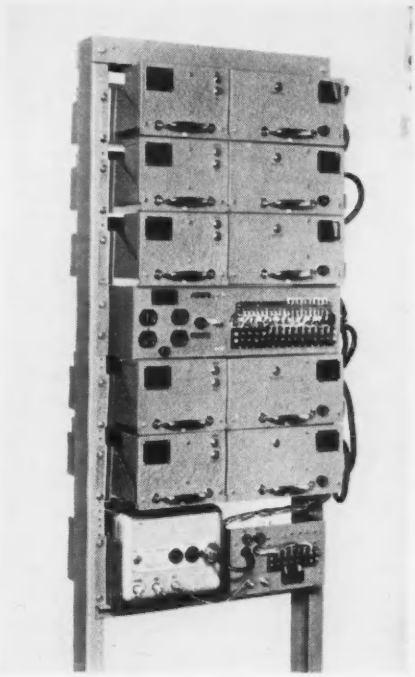
Addressing the spring conference of the Southeastern Association of Railroad & Utilities Commissioners on the telephone separations manual was A. L. Hutchison, executive assistant of the Kentucky Public Service Commission.

Mr. Hutchinson suggested the disparity in charges assessed to the two operations should be reduced by shifting more of the costs from intrastate to interstate users.

He said a formula based on the "value of a call" would help equalize inequities, such as a long distance call within a state which costs more than an outside call to a more distant point. Mr. Hutchinson said the interstate calls, usually for business purposes, are of more value than most "local" calls, yet they cost less.



Lynch B-120 Subscriber Carrier equipment can be mounted in a Central Office 19-inch relay rack or in a Lynch A-48 weather-proof pole-mounted box.



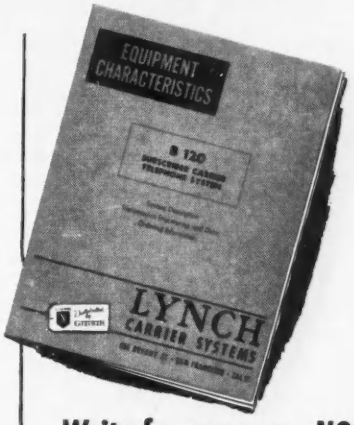
The Lynch B-120 is a carrier system which provides an economical means for increasing the capacity of a party line.

How to put more toll circuits to work on existing lines...via Graybar

You can provide one to five individual carrier telephone channels with the new Lynch B-120 subscriber carrier telephone system—available from Graybar. You can superimpose all five channels on a telephone pair that may be carrying ten-party subscriber service. Each channel, working as a separate entity, complete with signalling, operates without interference with other channels or existing subscriber circuits.

You gain these 4 important advantages when you install the Lynch B-120:

1) Lower crosstalk levels; 2) lower operating frequencies; 3) more circuits on the same pole line or in the same entrance cable; 4) usable with any type of ringing system now in common use. For catalog and price information, plus seasoned help on any phase of carrier operation—call Graybar. Add our years of experience in telephony to yours and the toughest problems will get sound solutions—fast. 732-225



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"Equipment Characteristics" is a 74-page manual carrying a complete description of Lynch Carrier Systems, with a wealth of transmission engineering information and data. Write Graybar for a copy today. It will be mailed,—no charge or obligation.

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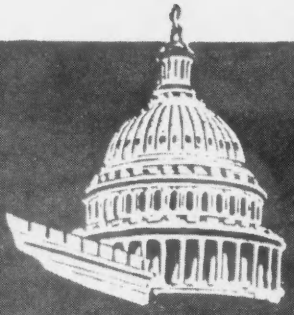
WASHINGTON NEWSLETTER



JUSTICE Departments' Anti-trust division suddenly a source of interest on common carrier communications . . . First air-to-ground radiotelephone service authorized by FCC.

FCC Hearings on Microwave Due To Start May 20

THE JUSTICE Department's Antitrust Division, relatively quiet as a center of news on common carrier communications matters since the issuance of the Bell System antitrust consent decree more than a year ago, has suddenly become a source of interest to Washington observers.

The relatively new Assistant Attorney General in charge of the division, Judge Victor R. Hansen, has turned into a fairly prolific letter writer on communications subjects, with two expressions of opinion to the Federal Communications Commission.

Latest letter to be made public was in connection with one of the FCC's major current proceedings, dealing with policy in frequency assignments above 890 megacycles, the so-called microwave portion of the radio spectrum. Issues of the case include policy questions about assigning the microwave frequencies to common carriers and private communications systems.

Hearings in the microwave case are due to start May 20, with testimony by more than 130 witnesses from 59 organizations expected over a period of about 10 weeks. The sessions will be held before the Commissioners for a minimum of three days a week.

Judge Hansen's letter, referring to an issue in the Commission's hearing order — whether a policy of denying private point-to-point systems because common carrier facilities are available would be inconsistent with the Communications Act, and whether it would lessen competition or foster monopoly in manufacturing and sales — Judge Hansen said "We are of the opinion that, by preferring common carrier operation of such systems, competition would be distinctly lessened and monopoly encouraged in the manufacture, sale, and use of the communications facilities adapted to this area of service."

In further discussion of the subject, Judge Hansen expressed the division's view as follows:

"We believe that section 314 of the Communications Act indicates a Congressional intent to rely upon competition to regulate and develop the communications field to the greatest extent possible.

"Those provisions of the act regulating common carrier activities proceed upon the principle that direct regulation must be substituted for competition. This principle is inconsistent with the principle of competition, and is applicable in those areas where the common carriers already had monopolies when the Communications Act of 1934 was enacted.

"There is nothing in the Communications Act to indicate that any particular portion of the radio spectrum, such as the microwave region, should be turned over to the common carriers. We believe that reconciliation of the two methods of regulation requires that the common carrier concept be given as limited application as the terms of the Communications Act will permit."

The other FCC hearing in which Judge Hansen has interested himself has a more direct bearing on previous Justice Department activity — the antitrust consent decree with the Bell System entered more than a year ago. That decree, it will be recalled, prohibits the Bell companies in general from providing services which are not regulated by federal or state authorities.

This was interpreted by various interests in the private communications field as barring the Bell companies from entering into lease and maintenance agreements for private mobile radiotelephone systems after a five-year period, during which existing customers may be served, expires.

As a result, the private groups protested when the Pacific Telephone & Telegraph Co. filed a tariff covering lease-maintenance service with the California Public Utilities Commission. The commission did not go along with their views, however, and accepted the tariff, concluding that the service involved is subject to regulation.

Now the AT&T Long Lines Department has filed a similar tariff with the FCC, covering lease-maintenance of interstate channels for remote operation and control of private system operations. Motorola, Inc., and the Petroleum Industry Electrical Association submitted oppositions to acceptance of the tariff, and the FCC has ordered a hearing and investigation.

Currently, the hearing has been postponed without date, pending Commission action on petitions by the intervenors to change the issues in the FCC hearing order.

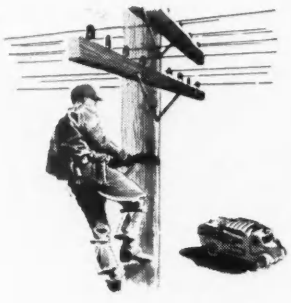
Please turn to page 22

The world of science behind
EXIDE-MANCHEX BATTERIES

Being interviewed is R. R. Jardine, Supervisor of Development Engineering

"Open windows let electrolyte in—power out"

At the Exide Laboratories—**Reporter:** You mean there's an important connection between the electrolyte and the battery power?



Jardine: Yes indeed. You see how I'm running these strings through the "windows" in the Exide-Manchex positive plate? These openings give the electrolyte free access deep into the interior of the plate.

Reporter: How does that affect battery performance?

Jardine: It means there's no time lag—no slow filtering of the electrolyte to reach the active material. There's a continuous contact between the electrolyte and the entire plate. So the power is there when it's called for.

Reporter: Do other batteries have this free access of electrolyte to the active material?

Jardine: No they don't. Because only the Exide-Manchex has the positive plate with the spiral lead buttons locked into a cast alloy grid.

Reporter: Obviously this is an important feature of the Exide-Manchex Battery.

Jardine: Yes it is, but it's just one of many engineering details that contribute to their long life and high capacity.

Note to battery users: When you order batteries for float or cycle service in stationary applications, be sure to specify Exide-Manchex. Write for detailed bulletin. Exide Industrial Division, The Electric Storage Battery Co., Philadelphia 2, Pa.

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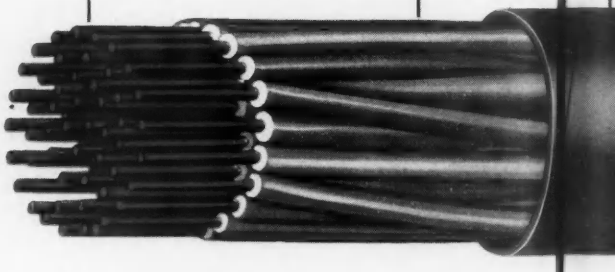
PHELPS DODGE THERMOPLASTIC EXCHANGE AREA TELEPHONE CABLE

FOR AERIAL, DUCT AND DIRECT BURIAL USES



Exchange Area Telephone Cable, Aerial and Duct Type
(Supplied with protective aluminum armor and outer polyethylene jacket when intended for direct burial)

The controlled craftsmanship and quality of Exchange Area telephone cable are typical of the entire line of Phelps Dodge thermoplastic telephone wires and cables including:

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Urban distribution telephone wir
Inside wiring telephone cable

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MINE-TO-MARKET" LINE...

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- Highest quality polyethylene compounds for insulation and jackets assured by top grade materials and Phelps Dodge's vast experience in the plastic wire and cable field.
- Unique "lay pattern" that virtually engineers cross talk right out of the cable.
- Electrically continuous aluminum shielding tape.
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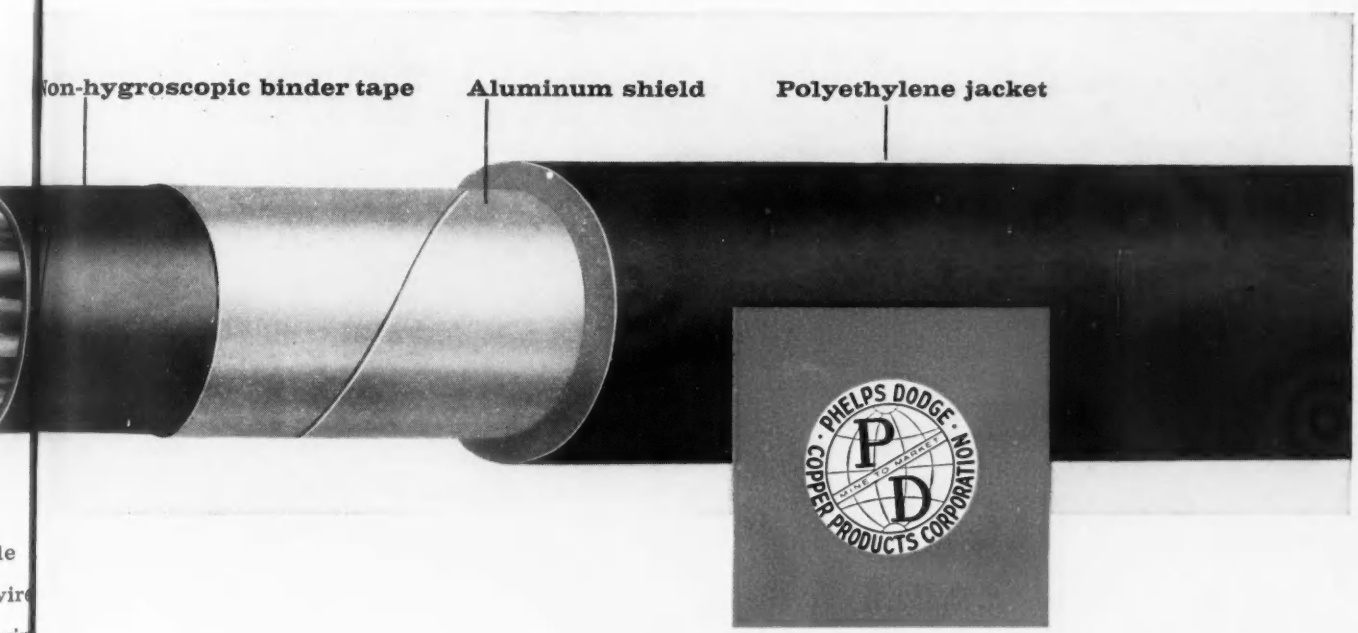
**Mylar—Du Pont's polyester film.*



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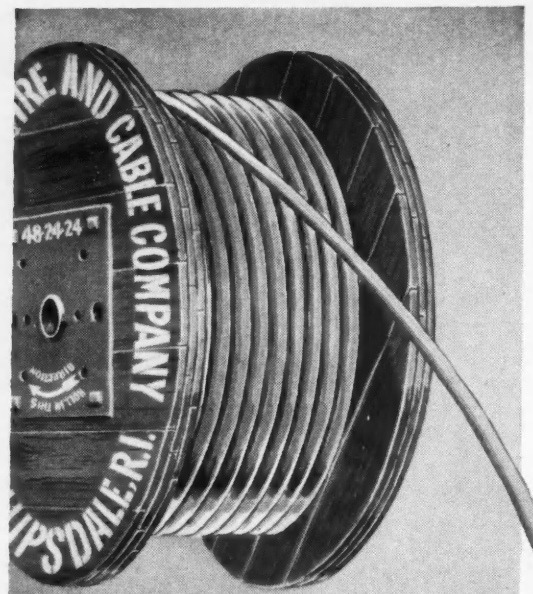

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Chicago	Detroit	Los Angeles	(Maspeth, L. I.)	Rochester	

Washington

(Concluded from page 18)

Judge Hansen's letter, as reported earlier, took the position that lease-maintenance service is not subject to regulation, and that telephone company provision of the service would be in violation of the consent decree.

The requests for change or broadening of the issues in the FCC case relied at least in part on Judge Hansen's views, particularly his statement that Justice "would be forced to consider seriously appropriate action" under the consent decree should the FCC allow the proposed tariffs to become effective.

Mobilization

THREE-YEAR mobilization planning project, including the establishment of standby priority plans covering use of telephone and telegraph services and restoration of essential intercity private line services, has been climaxed by the issuance of an executive order by President Eisenhower delegating the President's wartime powers over communications to the Director of the Office of Defense Mobilization.

The delegation is believed to be the first by the President of his wartime powers in advance of an emergency. It permits ODM to move immediately and without further authority to close, use, or control communications facilities in event of war. Censorship authority is not included in the delegation.

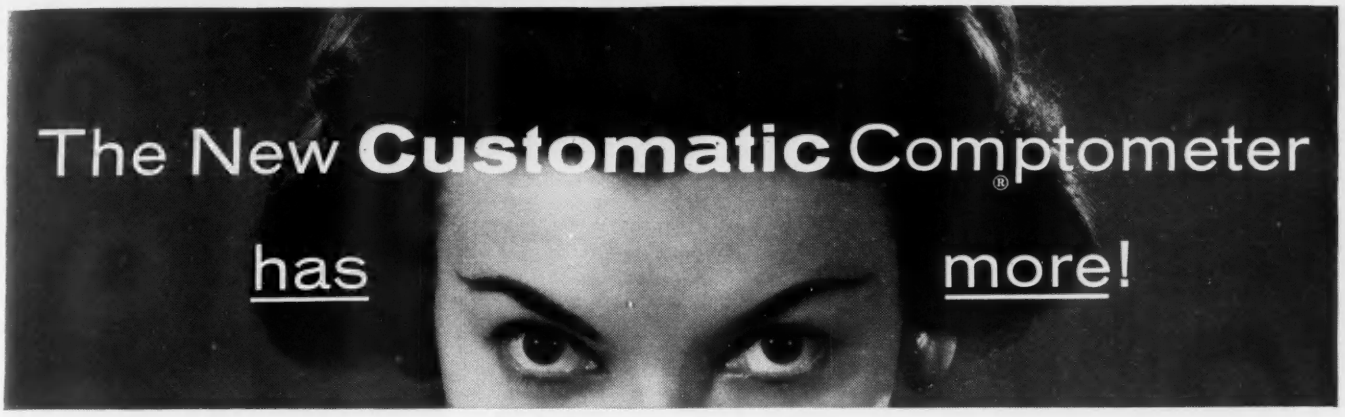
The White House announcement said the delegated authority is, "in time of war, to provide for a system of priorities for the use of the nation's telephone and telegraph systems, for the resumption of intercity private line service following interruption, and for the effective use of communications for the purposes of national defense." The desirability of the program, the announcement said, was demonstrated during last year's Operation Alert exercise.

A New Service

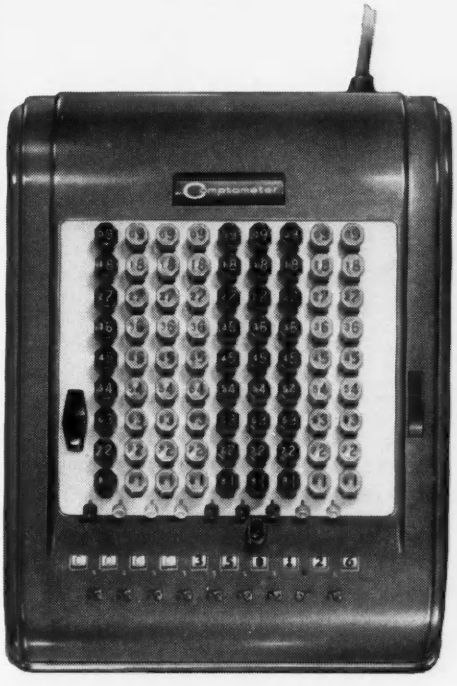
THE FIRST public facilities to be established specifically for air-to-ground radiotelephone service have been authorized by the FCC in developmental grants to the Michigan and Illinois Bell Telephone Companies for ultra high frequency installations in Detroit and Chicago.

In issuing the one-year developmental permits, the Commission pointed out that the grants are not to be construed as indication that the service will be regularly established in the frequency band asked. Action on the AT&T petition has been deferred pending further study of the developmental reports to be filed, and until decisions are mdae by the FCC on frequency allocations from 25 mc up.

The Commission authorized the Detroit and Chicago systems to provide communication service for hire in accordance with aircraft, service tariff schedules included in tariffs already on file at the Commission, in connection with public radiotelephone service now rendered principally on the surface.



MORE for the boss
in new features that mean low-cost, time-saving accuracy!



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The New Customatic Comptometer gives you everything you've learned to expect from Comptometer– plus 3 new features

NEW — **CUSTOMATIC KEY CONTROL**
operator simply adjusts new control to suit her own individual touch.

NEW — **INSTANT ELECTRIC CLEARANCE**
a touch of the bar and the dials are instantaneously cleared, electrically.

NEW — **COLOR**
smart, restful Diamond Gray, scientifically selected for eye-ease and good looks. Blends readily with modern office decor.

Still There, are all the features that have made COMPTOMETER unchallenged wherever fast, accurate, low-cost figure work is important!

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Active Ciphers – All ciphers to the left of answers are eliminated. Ciphers and numerals in the answer are distinct and easily read.

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Molded Key Tops – Finger-tip fashioned.

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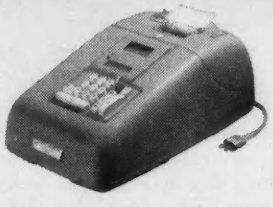

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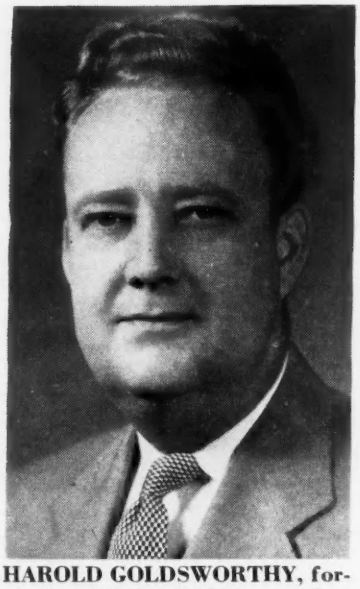
PEOPLE IN THE NEWS

"THIS IS HOW YOU MAKE OUT A TOLL TICKET," says NINA TAYLOR, telephone operator training instructor in West Los Angeles to DONALD WOODS, staff assistant and two students: JEANETTE BACON and MARJORIE GRAUER as they learn some of the technicalities involved in the function of handling long distance calls. (For complete story, see page 66.)

Editors of the "Lenkurt Demodulator," past and present, celebrated the launching of the magazine's sixth year of publication with the March issue which was mailed to 11,000 readers. Left to right are Associate Editor JOHN A. DIPPEL; Editor and Lenkurt Technical Services Manager A. MILTON SEYMOUR; former Editor and now Assistant Export Manager HARRY J. LEWENSTEIN; and former Editor PAUL C. DeMUTH, now chief consulting engineer for Lenkurt's Commercial Relations Department.

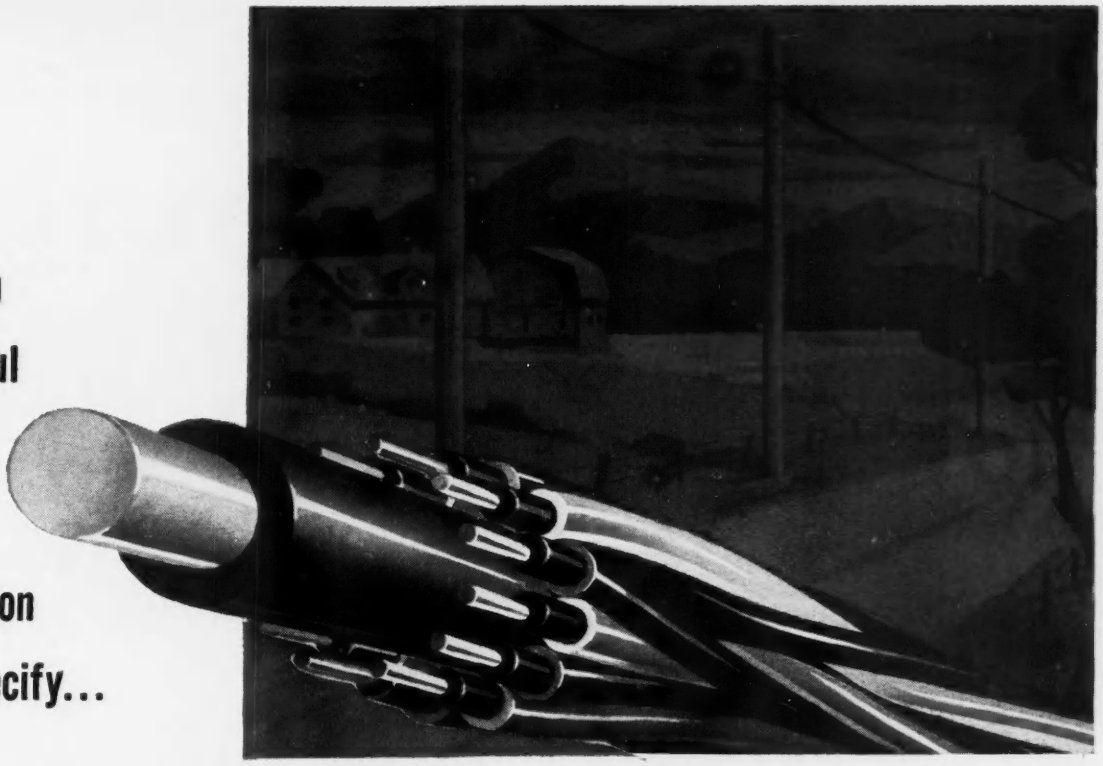
Executives of the Schauer Manufacturing Corp., S. E. WRIGHT, vice-president, sales (left) and A. J. KOHN, president, are shown with one of the many types of industrial transformers the Schauer firm designs and manufactures. The Schauer firm is celebrating its 50th anniversary.



HAROLD GOLDSWORTHY, formerly with the Bell System, has joined L. M. Berry & Co., and will work out of the general sales office at Dayton, Ohio. Prior to L. M. Berry, Mr. Goldsworthy had been associated for several years with the Mountain States Telephone & Telegraph Co., the A. T. & T. Co., in New York, and the Michigan Bell Telephone Co., in Detroit. Following his work in the directory department for Michigan Bell, he was division commercial superintendent in northern Michigan and later was general sales manager for the Michigan Bell in Detroit.

Plan to Attend USITA's 60th Anniversary Convention, at Conrad Hilton Hotel, Chicago, October 14, 15, 16.

For long-term successful service and satisfaction users specify...



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SUBURBAN Suburban Distribution Wire is a first cousin of Rural Distribution Wire, being of similar construction except the conductors are supplied in size 22 AWG. Available in 6, 11 and 16 pairs.

URBAN A specially-developed, color-coded PVC compound provides extreme weather resistance to conductors of General Cable Urban Distribution Wire, assuring excellent electrical characteristics for the short spans common to urban wire use. High-molecular weight polyethylene insulation over support wire minimizes environmental cracking and weathering. Staggered pair lays minimize crosstalk, superior cabling lay permits easy attachment to support wire. Available in size 24 AWG, 16 pair only.

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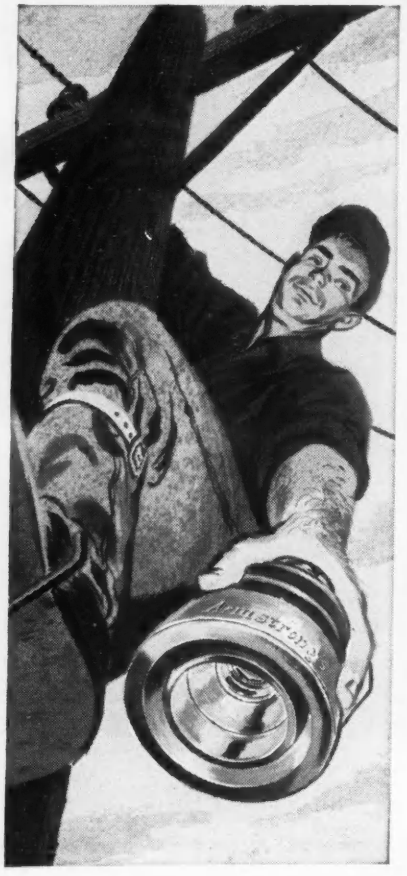


Smooth seams

All Armstrong Glass Insulators have an important thing in common: smooth seams. There's no danger of cut hands for linemen, for every insulator is carefully inspected for smoothness before it leaves the lehr. Get complete data on these fine insulators by writing Armstrong Cork Company, Glass and Closure Division, 295 Fifth Ave., New York 16, N. Y.

Watch Armstrong Circle Theatre every other Tuesday evening on NBC-TV

Armstrong
GLASS INSULATORS
for communications . . . for power

REVENUE BOOSTERS

"One Stop Plan"

THERE'S A REAL bargain for residence customers in the new "one-stop" service installation plan now in effect in all Indiana Bell exchanges.

The new, simplified "one-stop" plan permits the company to pass along to the residence customers savings in installation costs that result when employes make more than one change in service on the same visit to the customer's home.

And it gives the employe the opportunity, too, to convince the customer that there is no time like the present to make all the service arrangements necessary to suit the needs of everybody in the household.

The illustrations cover the most frequent cases in which the customers can benefit from the "one-stop" plan. *In all cases in which the customer wishes telephones in color, the initial charge for each telephone in color will apply.* Spring cords will be installed without charge if employes are doing other work on the premises for which a charge is being made, or if service is being upgraded.

(1) *When main service is being installed or moved to another address*: Indiana Bell will also install extensions, move extension telephones from one room to another, or change black telephones to color, without making installation, move or change charges other than the service connection charge for the main service, and the initial charge for color, if color is desired.

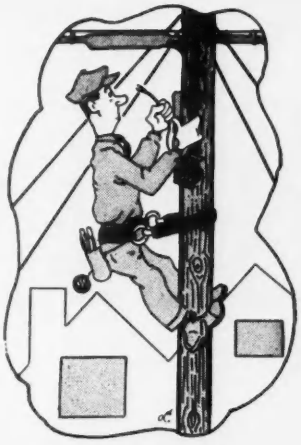
When service is being installed.

(2) *When service is being upgraded*: No installation charge for extensions put in at that time. There will be no charge for replacing a black telephone with color, although

When a telephone is being moved.

When an extension is being added.

When a telephone is changed to color.



When service is being upgraded.

the initial charge for color will apply.

(3) *When a telephone is being moved*: If a telephone is being moved, for example, from a hallway to some other room, Indiana Bell will install extensions, or change to color, without making other charges for installation of extensions or changing telephones. Here again, if telephones in color are desired, the initial charge for color will apply.

(4) *When an extension is being added*: A charge for an extension will also cover the installation of other extensions put in at the same time. The charge for changing any existing telephones to color will also be waived, but the initial charge for color applies.

(5) *When there is a change in type or color of telephone for which a change charge applies*: Indiana Bell will install extensions without an installation charge.

In describing this "One Stop Plan" *Indiana Telephone News* told its readers — "We all have an obligation to let customers know of the savings that are possible under the new plan and to point out to them the advantage of reviewing all service arrangements in the home whenever any change is considered."

Bishop's Bi-Seal, a self-bonding (polyethylene based) electrical tape, possesses the unique characteristic peculiar to many plastic products . . . a retentive memory. When Bi-Seal is stretched during a normal splicing operation it "remembers" its original shape and fuses into a tight, homogeneous mass in an attempt to return to its normal form.

Within seconds a Bi-Seal splice has become a long-lasting, water tight seal, virtually non-absorbent and offering high dielectric strength and unusual resistance to moisture, corrosive atmospheres and chemicals.

Bi-Seal performs efficiently on any insulation and is unexcelled for cold weather applications, as low as —55°C. . . . never brittle, never shatters, conforms perfectly to the most complex shape or contour . . . lasts as long, or longer than the original insulation.

Highly recommended for communication and power distribution wire and cable splicing, moisture-proofing bi-metal connections, sealing corrosion-resistant conduit couplings, and insulating high frequency electronic circuits. Accepted by REA for insulating plastic telephone cable.

Write today for your free copy of Bishop's new tape catalog.

Bishop Bi-Seal is available from your distributor.

INDEPENDENT

ELECTRICAL INSULATING BI-SEAL SELF BONDING TAPE

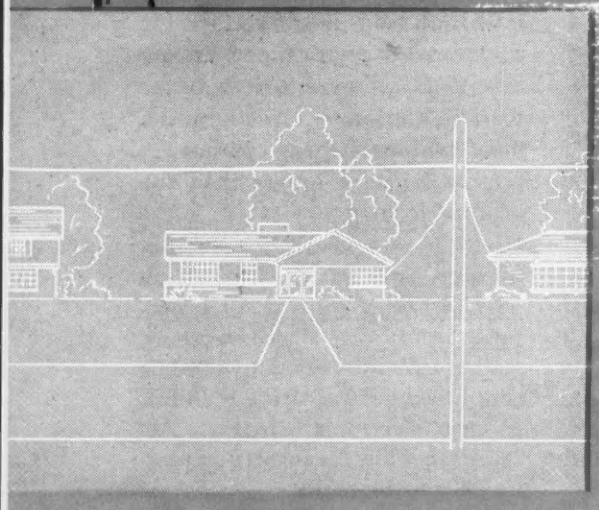
BISHOP

MANUFACTURING CORPORATION

11 Canfield Rd., Cedar Grove, New Jersey

TELEPRENE®

astonished the industry



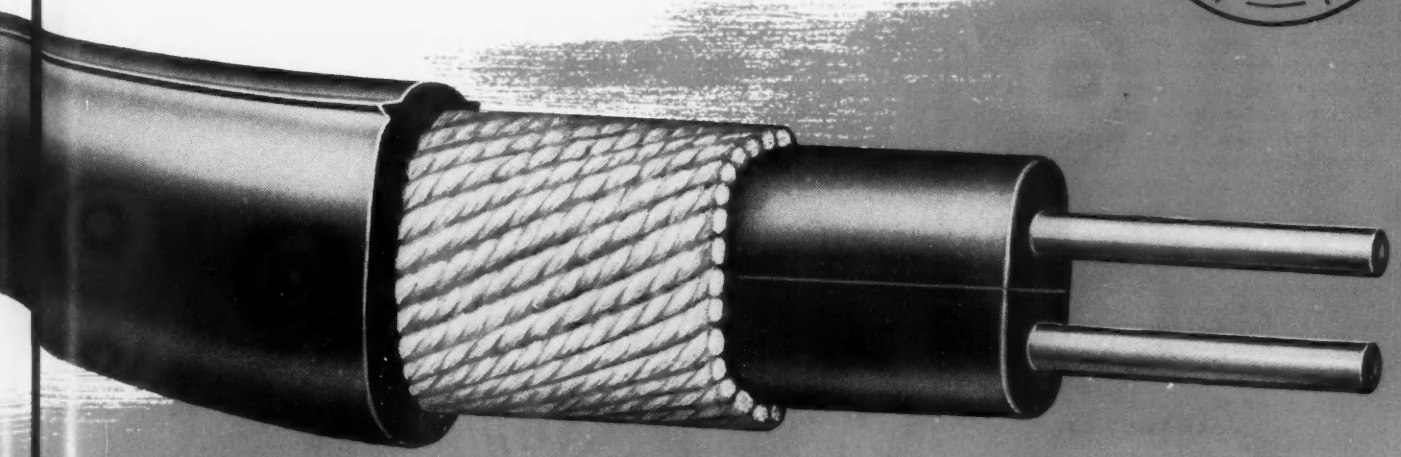
WB has that which others have yet to gain . . . EXPERIENCE

drop wire...

After more than ten years in test installations WB TELEPRENE Drop Wire shows no appreciable deterioration . . . it is still providing good-as-new service. Before WB introduced neoprene jacketed TELEPRENE the *average* life of drop wire was only seven years . . . up to now no "average" has been established for TELEPRENE.

Independent Telephone Companies have saved hundreds of thousands of dollars by using extra-long-lasting neoprene jacketed TELEPRENE . . . consequently they now expect comparable high quality from *all* WB telephone wires . . . AND THEY GET IT!

60 YEARS OF INDEPENDENT TELEPHONY
INDEPENDENT
1897 — 1957



Well Built Wires Since 1899

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WHITNEY BLAKE COMPANY

NEW HAVEN 14, CONNECTICUT

Pat. Pend.

*KLEIN KUT PLIERS
for both regular and heavy-duty cutting

It was Klein that produced the first and still the finest regular side-cutting plier. Klein also gave the industry the modern, streamlined version so much in demand.

And it's Klein again with a new, high leverage cutting plier for light- or heavy-gauge wire, including No. 2 weatherproof hard drawn solid copper wire, and A.C.S.R.

There's no extra hinging of any kind—no uncomfortable wide-spread handles—with this new Klein-Kut Plier. The offset hinge permits the extra-high leverage and operation is as smooth and easy as with any other Klein Plier. Forged from high-grade tool steel, individually fitted, tempered, adjusted and tested. Ask for No. 213-9 N.E. for streamlined pattern.

Regular pattern available
Same high-leverage design, but in the original Klein side-cutting pattern. Ask for No. 213-9.

Write for free Copy of Bulletin 1054

*Trade Mark

ASK YOUR SUPPLIER

Foreign Distributor: International Standard Electric Corp., New York.

"Since 1857"

Mathias Established 1857 KLEIN & Sons Chicago, Ill., U.S.A.
7200 McCORMICK ROAD • CHICAGO 45, ILLINOIS

SAFETY CORNER

"It's Foggier Than You Think"

WHEN you are hitting it up in your car at 60 miles per hour, how well can you see?

Why, I can see all right, you say. The road stretches ahead perfectly clear. You spot the cars, trucks, curves and bridges without difficulty.

But what else do you see? It may surprise you to know that the narrow strip of road is just about all that you can see, traveling at that rate.

By making a few simple self-tests, and thinking about what they mean, you can catch a glimpse of the true function and importance of the eyes in driving a car. The factor of vision has scarcely been touched in the mad search for the causes and prevention of road accidents, which caused 38,300 deaths and 1½ million non-fatal injuries in 1955.

Here is the simplest kind of test. At a crossroad is a post bearing half a dozen names of towns and villages, one above the other. How many of the names can you read at 60 m.p.h? You have remarkably good eyes if you can "grab" even the top one. The others are a mere blur.

At the next road crossing, drop down to 40 and you can probably read at least two of the names. At 30 you may take in three or four.

That proves beyond a doubt that one part of your vision goes to pieces at high speeds. It is the part which includes objects flashing past you at the sides of the road.

Why does this breakdown of vision take place? It may be because the eye, like a camera lens, just can't work fast enough to capture a speeding object. Or it may be that the eye registers the image all right, but the brain, which really does our seeing, can't recognize or distinguish the images formed by the eye.

Here is another way of making the test. Look straight out of the side window at the scenery. Well, you seem to see that all right! Trees, houses, animals, all are distinct.

But they are only distinct, because unconsciously you let your eyes travel backwards with

ACUITY, CLARITY
Majority of adult Americans can't pass 20/20 test and/or have astigmatism

TUNNEL VISION
56% of "accident repeaters" can't see well sidewise

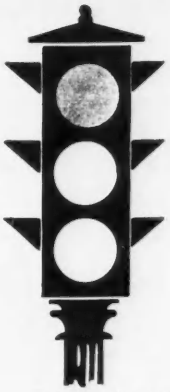
POOR GLARE RESISTANCE
After passing headlights, driver travels 73' blind

each flying object for a fraction of a second, as you fix on it. That gives time for recognition. If you doubt this, try looking out of the window through a cardboard tube, held perpendicular to the line of the car's movement. (Better let somebody else drive the car!) You will see nothing but a confused blur because your eyes cannot dwell anywhere long enough to recognize objects.

When you are jogging along at 20 miles per hour, not only the road is clear, but so are the objects covering a wide range on each side of it as you look straight ahead. Your vision at that speed approximates your normal vision, walking or sitting still.

But as you step up the speed, the clear area on each side contracts toward the center. The side areas may not look foggy. All you can say is that at the lower speeds you were recognizing objects far to the right and left without shifting your eyes, whereas now you are not recognizing them.

So it turns out to be a startling fact that, at high speeds, you are driving through a kind of self-created visual tunnel, your "corner-of-the-eye" vision virtually demolished and even your direct vision thrown into confusion when the eyes are turned sidewise on passing objects. None of your seeing ability remains unimpaired except the look straight ahead down the road. Even that may be affected in insidious ways.



COLOR-BLINDNESS

8% of men, fewer women, have color-blindness

Research may some day prove that vision is the key fact in managing a car — see right, and you will drive right. Meanwhile, you can set up a new standard for your own safe speed, based on the experiments you have made: when side vision is a blur, step on the brake.

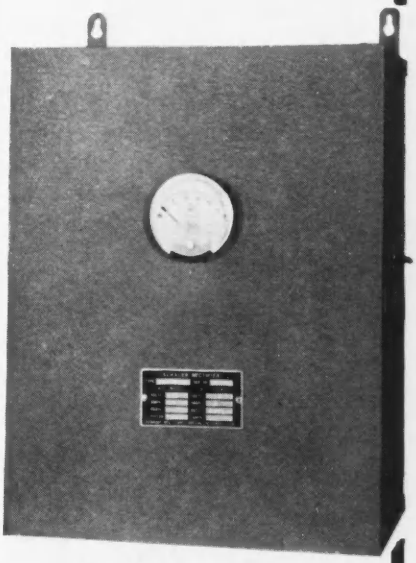
Consult an eye specialist to learn whether you have any visual defects that can be corrected with driving glasses. If so, get and wear glasses. Tinted lenses are preferred for daylight driving, with your prescription "ground in." Ordinary sunglasses are more of a hazard than a help when your vision is faulty.—"The Transmitter," published by the Chesapeake & Potomac Telephone Companies.

Types of Accidents Resulting in Deaths

	1956		1955	
	Persons killed	Per cent	Persons killed	Per cent
COLLISION WITH:				
Automobile	15,880	39.7	14,860	39.3
Non-collision	10,000	25.0	8,430	22.3
Pedestrian	8,080	20.2	8,130	21.5
Fixed object	4,120	10.3	4,420	11.7
Railroad train	1,280	3.2	1,280	3.4
Bicycle	480	1.2	490	1.3
Other vehicle	40	.1	80	.2
Miscellaneous	120	.3	110	.3
TOTAL	40,000	100.0	37,800	100.0

Dependable Power

for Years- and Years- and Years- of Service!



Schauer
ELECTROX

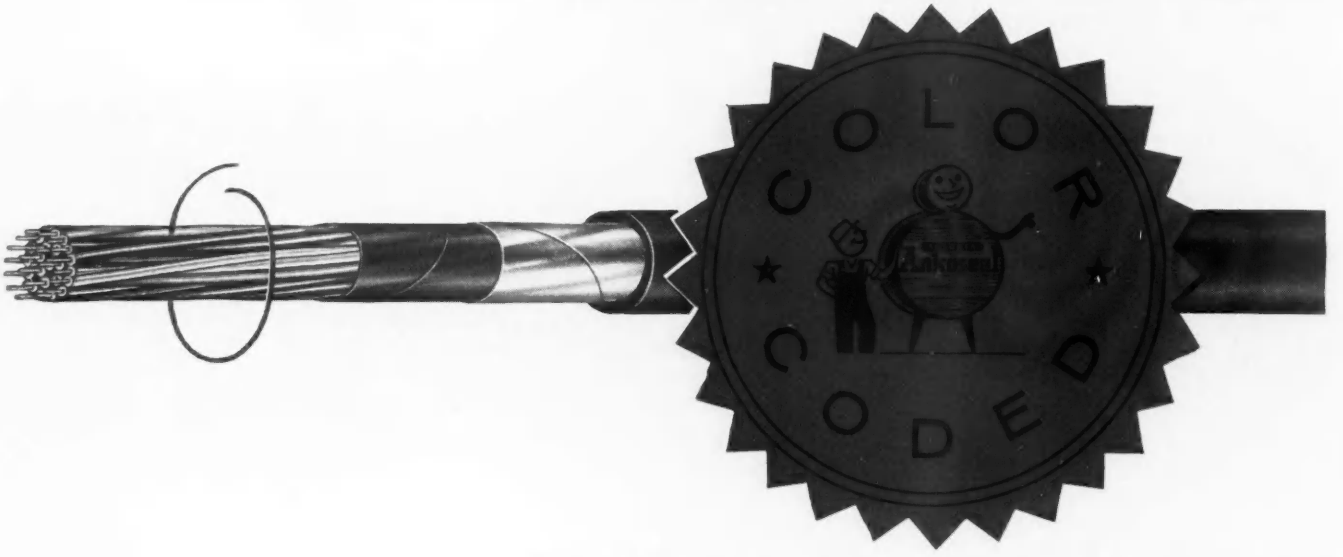
BATTERY ELIMINATORS
BATTERY CHARGERS

In sizes and capacities to meet every telephone power requirement.

See your Schauer Jobber.
Write for Bulletin 4516.

RECTIFIER DIVISION
SCHAUER
MANUFACTURING CORP.
4516 Alpine Ave.,
CINCINNATI 36, OHIO

Announcing an Important ANSONIA® Ankoseal® FIRST!



COLOR CODED CABLES

Generally Available For The First Time

FROM STOCK

Effective May 1, all ANSONIA ANKOSEAL Exchange Cables are fully COLOR CODED in all sizes 6 pr. to 101 pr. in layer construction and in group construction over 101 pr.

Now You Can Have Time-Saving, Money-Saving COLOR CODED CABLE with all the famous ANSONIA ANKOSEAL Performance Characteristics Including:

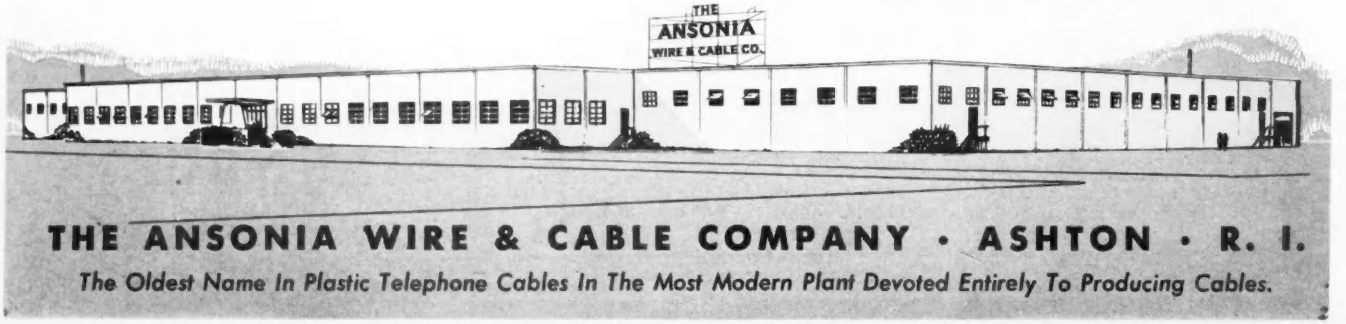
Freedom From Cross Talk and Circuit Unbalance

ANSONIA ANKOSEAL COLOR CODED CABLE splices easier and in less time than ordinary cables and you'll realize substantial savings in installation and maintenance.

ANSONIA ANKOSEAL
COLOR CODED CABLES
BUILT UP TO QUALITY
NOT DOWN TO PRICE

INDEPENDENT

Complete information and samples on request



THE ANSONIA WIRE & CABLE COMPANY · ASHTON · R. I.

The Oldest Name In Plastic Telephone Cables In The Most Modern Plant Devoted Entirely To Producing Cables.

FREE LITERATURE

This feature of "Telephone Engineer and Management" helps you get up-to-date technical bulletins, catalogs and literature. To obtain your copies write Reader's Service Department, 7720 N. Sheridan Rd., Chicago 26, Ill.

Batteries

BULLETIN from Exide Industrial Division gives complete data on batteries for float or cycle service in stationary applications.

Batteries For Microwave

BULLETINS CP-536 and CP-537 from C & D Batteries, Inc., describe and give technical data on batteries for microwave communication applications. According to the manufacturer the batteries are engineered to provide dependable, instantaneous emergency standby power in unattended, out-of-the-way microwave transmission and relay stations.

Booths

FOLDER from Benner-Nawman, Inc. describes the B/N line of outdoor booths.

Booths

LITERATURE from Prairie Implement Co. describes Prairie line of pole-mounted, outdoor telephone booths.

Booth Signs

LITERATURE from Geeco, Inc. describes complete line of lighted signs for outdoor booths.

Cable

CATALOG from General Cable describes complete line of wires and cables for inside and outside plant installations.

Cord Catalog

CATALOG from Commercial Cord & Supply Co., Inc., gives complete information on Commercial Cord's line of handset cords, deskset cords, switchboard cords, reeciver cords, transmitter cords and patch cords.

Dead-Ends

BULLETIN from Preformed Line Products Co., describes the PLP guy-grip dead-ends. Unit has no moveable parts, no bolts or clamps to tighten. Installation is simple; just hand-wrap the dead-end legs around the strand.

Engineering Data

DATA BOOK N-53 (T-E-M) from Indiana Steel & Wire Co., gives engineering data on stringing sags and tensions, staking cables and guying tables for heavy medium and light loading districts.

"Explosimeter"

LITERATURE from Mine Safety Appliance Co., describes the M-S-A "Explosimeter," an instrument designed to accurately test for flammable gases or vapors in underground structures.

Floor Wax

A COMPLETELY new, reformulated water emulsion floor wax, WESTWAX, is described by new literature released by the West Disinfecting Co.

This new anti-slip wax for industrial and institutional uses on all surfaces is formulated with a highly refined grade of pure, light-colored Carnauba wax which the manufacturer claims enables the material to be used on light colored or even white floors without fear of discoloration. The wax also contains Mirite (R) the company's emulsion of a

COTTON
Serviceable for all around uses. Standard everywhere.
NYLON
Smooth texture, easy to handle. Preferred for switchboard use.
NEOPRENE
Very popular because easy to keep clean. Moisture and grease proof.

Runzel

CORDS

the WORLD'S FINEST

...for every purpose!
...for every instrument!

Take your choice—Neoprene, Nylon or Cotton. They're all high quality cords made in accordance with Runzel high standard of quality. We carry large stocks of cords to meet every need. Our geographical location means Quick Service.

RUNZEL CORD & WIRE CO.

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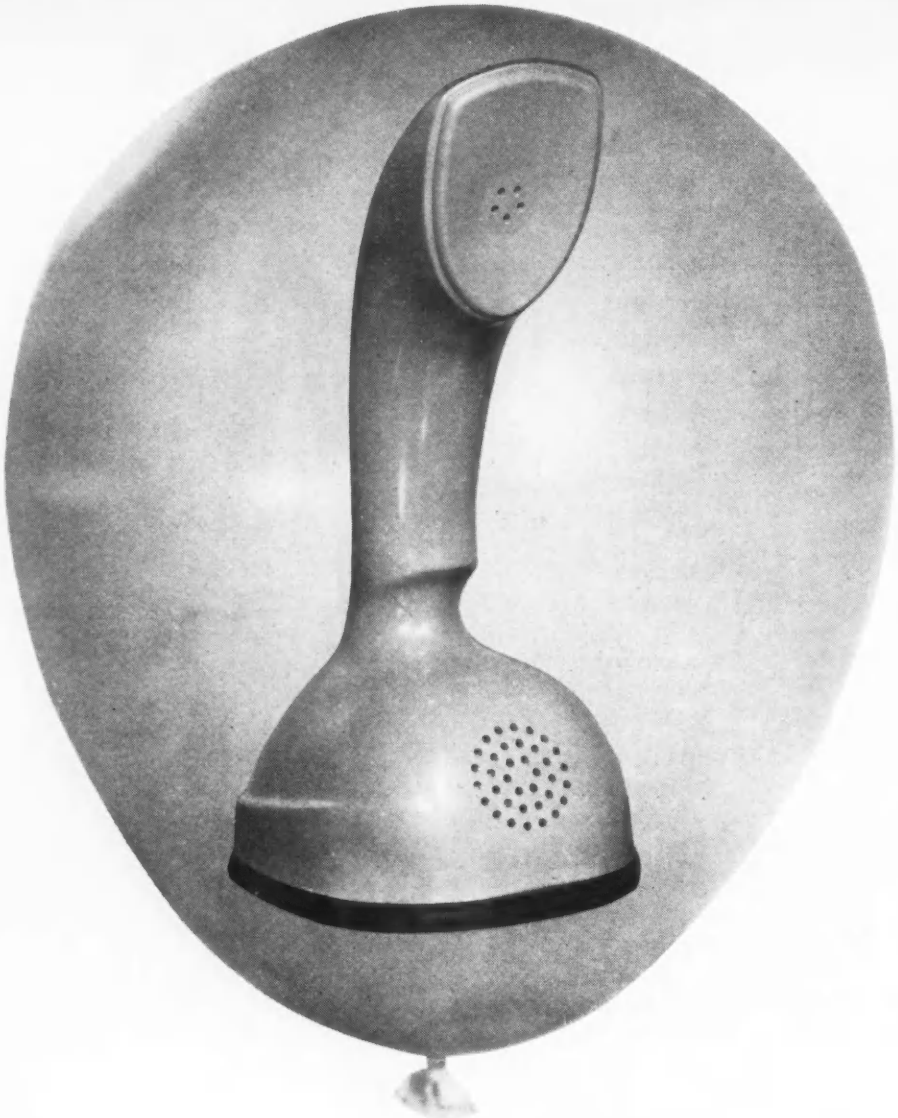


Oooh

...so light....

OOOH—SO RIGHT...

Is the Ericofon as light as a balloon? Well—not *really*, but it is so light as to give an impression of almost complete weightlessness!

The outstanding design of the one-piece Ericofon has resulted in a balance that makes holding and using the Ericofon virtually effortless.

Yes, using the Ericofon is easy as "child's play," and the "dial-comes-to-you" feature further enhances the advantages of the Ericofon.

Truly—the Ericofon is "Oooh so Light."

And in beauty, charm, and convenience, the Ericofon is "Oooh so Right."

You may offer your subscribers the Ericofon—it is available to you in six charming colors—available to you only from NORTH.

NORTH ELECTRIC COMPANY

655 SOUTH MARKET STREET • GALION, OHIO

clear
lines
fast with...

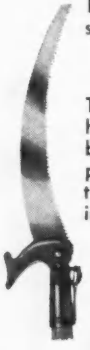
SEYMOUR SMITH
"Telephone" Tree Pruner

Here's the standard, the choice of the utility industry for years. Powerful action to cut cleanly—tough and almost unbreakable—easy to handle. No. 12 Pruner Head has 1½" cutting capacity. The lighter, No. 11, handles up to 1" branches. Both are malleable iron castings with tempered steel cutting blade.

Poles (18 ft. 3 sections) are of selected spruce with positive locking, seamless aluminum, telescoping ferrule joints.

FAST CUTTING PRUNING SAWS

Designed for fast, easy cutting—large, deep teeth, finest Swedish charcoal steel, streamlined, laminated hardwood handles. Every model you need up to chain saw work.



No. 20 POLE SAW HEAD

Tough aluminum head with large hook and outside horn for pushing branches, raising wires, etc. Also paint brush holder with wire clamp that holds brush securely. Fast-cutting 16" blade. Poles available.

FREE: Send for Seymour Smith catalog pages on tools for utilities. Keep them on file for easy reference.

Quality Tools
SEYMOUR SMITH
Since 1850

SEYMOUR SMITH & SON, Inc.
4405 Main St., Oakville, Conn.

hard, clear, glossy plastic which gives the wax its extra durability; it also contains Ludox which adds to its anti-slip properties. WESTWAX has been listed by Underwriters' Laboratories as an anti-slip floor maintenance material.

This new wax which provides a high initial gloss without buffing is scuff-resistant and water-resistant, at the same time it is easily removed when desired. It may be damp mopped and buffed repeatedly as a means of economical maintenance, thereby providing a clear, sparkling, mirror-like finish.

"Kineplex" Data System

LITERATURE (TE-202) from Collins Radio Co., describes "Kineplex" — a high speed digital system to double communication capacity.

Adaptable to wireline, cable, radio, or microwave facilities, "Kineplex" provides twice as many channels on a 3 kc band as present day carrier teletypewriter systems. In teletypewriter applications this means 40 channels on a 3 kc band at 60, 75, or 100 words a minute operation.

"Kineplex" will take stored business machine data in serial or parallel form and transmit it at the same 3,000 bit per second rate. Material can be fed from magnetic tape, paper tape, punched cards, or other storage media.

"Kineplex" can also be used for telemetering, supervisory control, and facsimile. The total data transmission capacity of the system can be divided between various services to fit specific applications.

Line Construction Body

THE Body Division of York-Hoover Corp., has published an attractive 4 page bulletin (H-146, TE&M) describing the Model SLW-96 Line Construction Body, a complete line construction unit which includes equipment and carrying facilities to perform all the operations necessary to construct a transmission line.

The SLW-96 is designed to perform line construction work faster and more economically with only a two man crew. It is available with the latest type "field proven" hydraulic derrick and digger, either for front or rear operation; a selection of winch capacities with hydraulic winch operation, if desired, and other items of optional equipment which can be combined to do your particular job.

Within the spacious body compartments, ample room for necessary tools and materials is provided. Material drawers for small parts are designed with adjustable partitions for maximum adaptability. Special compartments are included for saws, water cask, cup dispenser and rubber goods.

The body itself is of all steel construction, including the diamondette, non-slip floor.

Outdoor Booths

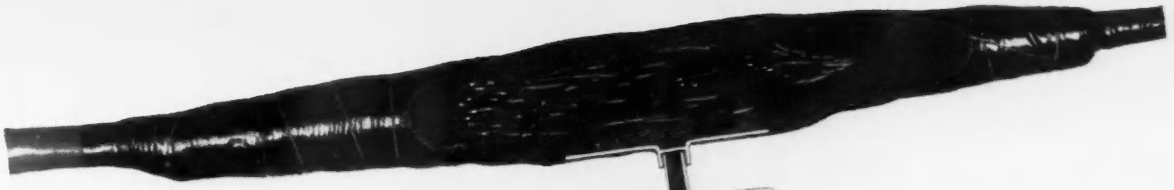
BROCHURE from Aluminum Co. of America gives complete data on Alcoa Outdoor Aluminum Booths. Booths come in six-sub-assemblies which lock together into a solid structure.

Service Body

NEW, bulletin (No. 942 TE&M) from the Body Division of York-Hoover Corp. illustrates and describes the model YMR-76 service body, designed to meet the need for a unit that provides ample and convenient carrying space for materials and tools, with the capacity for adjustment to meet changing conditions that might occur from time to time. The trays in all vertical compartments are adjustable for the most logical spacing. An exceptionally long thru drawer is provided, accessible from the curb side rear vertical compartment, having adjustable partitions for carrying small parts.

A thru compartment is located in the front vertical compartment where long tools can be carried or an additional material drawer can be utilized. In the street side horizontal compartment, two tiers of material bins with adjustable partitions are located with additional divided material carrying space below. The curbside horizontal compartment contains ample shelves and a sliding tool tray.

Many "custom" construction features are engineered into this body unit, including four cross members beneath the steel treadplate floor for greater base stability, a deep drop gate at the rear, especially designed to prevent sagging; and easy-action telescoping roof with rear section snugly meeting end gate, providing complete protection for body interior; and double panel compartment door incorporating galvannealed non-corrosive steel.



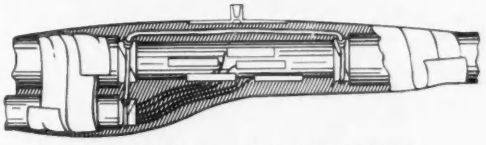
REG. U. S. PAT. OFF.

SCOTCHCAST BRAND Pressure Splice...

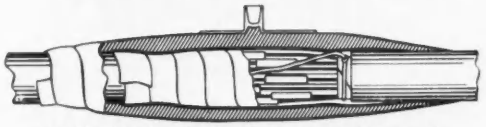
POSITIVE SEAL for FIELD SPLICES

REG. U. S. PAT. OFF.

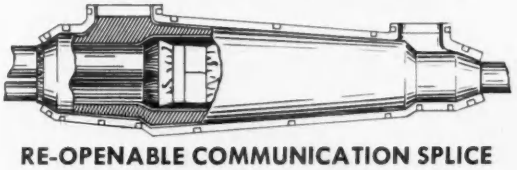
SCOTCHCAST BRAND seals all these splices:



WYE COMMUNICATIONS SPLICE
—use "SCOTCHCAST" Pressure-Splice



NON-IMPREGNATED CONDUCTOR
—use "SCOTCHCAST" Pressure-Splice



RE-OPENABLE COMMUNICATION SPLICE
—use "SCOTCHCAST" 89 series Kit

COMMUNICATION INLINE SPLICE
—use "SCOTCHCAST" 82-A series Kit

"UNIPAK" *Container holds laboratory-correct mixture of "SCOTCHCAST" Resin No. 4 to make a quick, easy, factory-quality splice insulation in the field.*

Here's a revolutionary new method of sealing field splices made possible by "SCOTCHCAST" Epoxy Resin in the easy-to-use "UNIPAK" container. This new "SCOTCHCAST" Pressure-Splice method provides a simple, practical, and quick way to seal field splices on communication or power cables where the size, shape, position, or inaccessibility of the splice make gravity-pour resin-sealing methods difficult. The Pressure-Splice method even works upside-down as illustrated.

For further information, just write on your letterhead to: 3M Co., St. Paul 6, Minn., Dept. MI-57.

REG. U. S. PAT. OFF.

SCOTCHCAST BRAND Splicing Kits

...by the makers of
"SCOTCH" Brand No. 33 Electrical Tape

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PRODUCT OF 3M COMPANY RESEARCH

Here's

D. O. HOOD, President of Columbia Utilities Company of Medford, Oregon, recommends Stromberg-Carlson XY toll ticketing.

COLUMBIA UTILITIES COMPANY

MEDFORD, OREGON

November 26, 1956

Stromberg-Carlson Company
Rochester, 3, N.Y.

Attn: J. D. Confeld
Senior Toll Ticketing Engineer

Dear Sirs:

Our Stromberg-Carlson XY VID automatic toll ticketing equipment was installed at our White City, Oregon exchange and toll center and cut into service on August 3, 1956. Since that time it has functioned exceptionally well, with a minimum of the "bugs" common to new equipment installations.

Our subscribers at the five dial exchanges equipped soon became quite proficient in dialing direct between these five exchanges, and to the Medford and Central Point exchanges of The Pacific Telephone and Telegraph Company (Bell System) stations. We have received relatively few complaints from subscribers affected by the new direct distance dialing innovation, and have been highly complimented by a great many subscribers.

We had reached the point where installation of an additional toll switchboard position was essential at the White City toll center. However, since installation of the toll ticketing equipment, such is no longer necessary, and we have been able to idle one of the existing positions. The effect is a saving of two full time shifts of operators, and at the same time an increased toll volume of around 25 %, and highly pleased subscribers.

Early next year we will expand our direct distance dialing areas to cover six additional Medford tributary exchanges. This should effect some further savings in operating costs, and some additional toll stimulation.

We are pleased therefore to recommend automatic toll ticketing to those companies who are able to "prove in" such operation.

Very truly yours

D. O. Hood
President

White City exchange of Columbia Utilities Company XY toll ticketing effected 25% increase in toll volume and cut costs for this West Coast independent.

Proof of the Pudding

Oregon independent boosts toll volume 25%, cuts costs, with STROMBERG-CARLSON TOLL TICKETING

After only a few months of operation, Stromberg-Carlson toll ticketing paid off handsomely for Columbia Utilities Company at its White City exchange.

You will find—as did this Oregon independent—that XY® toll ticketing does a *complete job:* watches traffic automatically, clears recorders on a schedule basis, records data with equal ease on electric typewriter or cardpunching machine.

With our completely compatible equipment, which features flexible routing and rating facilities, you're ready to adapt to the nationwide toll dialing system.

To learn more about how XY toll ticketing will boost your profitable toll revenue, call or write the Stromberg-Carlson representative in your area.

The effect is...an increased toll volume of around 25%, and highly pleased subscribers.

Early next year we will expand our direct distance dialing areas to cover six additional Medford tributary exchanges. This should effect some further savings in operating costs, and some additional toll stimulation.

We are pleased therefore to recommend automatic toll ticketing to those companies who are able to "prove in" such operation.

Very truly yours,

President

STROMBERG-CARLSON COMPANY

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EDITORIAL

"Independent Telephone Week"

RIGHT ALONG with other Independent telephone industry members we are pleased with the recent proclamation establishing the week of September 8, 1957, as "*Independent Telephone Week.*"

It is right that during this 60th Anniversary Year of organized telephony and the United States Independent Telephone Association (USITA) a week should be set aside to pay tribute to the Independent telephone industry and the loyal men and women who have made the industry great.

The 60th Anniversary of anybody or anything is worthy of commemoration. Sixty years is a long time in a world in which the proverbial span of human life is the Biblical three score and ten, and in which the adult and productive working years of the life of the individual are usually many less than that.

Most anniversaries are measured, in one way or another, in terms of human life, because most anniversaries commemorate something that people have done or have lived through. So it is with this celebration, of the 60th anniversary of the organization of a national Independent telephone association.

The thing that is really being commemorated is the act, 60 years ago, of those pioneers of Independent telephony who joined themselves together for the purpose of perpetuating Independent telephony, plus the acts, during all of the past 60 years, of all those men and women of the Independent telephone industry who have worked so hard and valiantly to keep the earlier organization and its successor organizations live, going and virile institutions.

The past 60 years, measured in terms of the flow of events and the changes in our way of life have been equal perhaps to 600 years at the world's earlier and more leisurely pace. This nation's population has more than doubled. The country has undergone political and social changes equivalent to those of many preceeding generations. Two major wars have been won. The world has seen the advent of the automobile, the airplane, radio communications, television, and the atom bomb.

And the telephone industry has seen an association which had its beginnings in 1897 — the United States Independent Telephone Association, grow so rapidly that it now represents some 4,400 Independent telephone companies which provide service for 9,000,000 telephones through 10,870 telephone exchanges to people living in two-thirds of the geographical area of the United States and its territories.

The records of the past and the present prove the Independent telephone industry has come far since its spunky beginning. Such records make it fitting and proper that the week of September 8, 1957 should be designated and set aside for a proper celebration of the 60th Anniversary of organized telephony and the birthday of the United States Independent Telephone Association.

USITA has announced that the observance will be under the general direction of its Diamond Jubilee Committee composed of Chairman *Carl D. Brorein*, Tampa, Fla.; *Thomas A. Boyd*, New York City; and *R. A. Lumpkin*, Mattoon, Ill.

This committee has suggested that all Independent telephone operating companies consider these activities during *Independent Telephone Week*: *Open houses, featuring a limited number of free long-distance calls and the use of voice-recording playbacks; appropriate publicity and advertising in local newspapers and company publications; and addresses by company personnel before service clubs in Independent territory.*

These are good suggestions and we hope all Independent telephone people will plan now to participate to the fullest extent in the industry's all-out effort to make its 60th Anniversary celebration a truly successful one.

Such industry-wide participation will add much to the importance of the birthday cake USITA will light up on September 8. In fact if each of the nation's 4,400 Independent telephone companies cooperate and participate in the activities planned for Independent Telephone Week, all industry members and the subscribers they serve will fully realize the achievements of the Independent telephone industry and have reason to give thanks that a calling so essential to the public welfare is permitted to flourish in an atmosphere of freedom in a free nation.

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"MANY INDEPENDENT companies are standing on the very 'toll road' of the future. More and more business traffic is headed our way . . . "

Planning Today

For Tomorrow's Progress

By DONALD C. POWER*

"LONG-RANGE planning is just what our Independent telephone industry must do, if it is to take its proper place in the future of our national economy.

THE OHIO Independent Telephone Association has set aside the year 1957 for emphasis on a program theme of the greatest importance to Independent telephony — *"Tomorrow's Progress Is Today's Planning."* I do not believe the association could have selected a more timely subject, because long-range planning is just what our Independent telephone industry must do, if it is to take its proper place in the future of our national economy. Of course, one of the best things about the future is that it only comes along one day at a time. That gives us a chance to adjust our plans, if our plans were not so good in the first place.

The first prerequisite of sound planning is to know what our job is, to know where we want to go, and to know what we are trying to do. So, what is our job?

Our job is communications — in its most modern, intimate, and confidential form. In this we share with other media, such as television, radio, and the press, a grave responsibility. From time immemorial, the art of communications between members of the human race has been the mother of knowledge, the source of wisdom, and the guardian of history.

No nation, no civilization has ever been any better or more progressive than the development of its art of communications. On the contrary, many ancient and forgotten peoples of the earth have been buried in the dust of oblivion because they had found no way or means, no systematic plan for communicating their thoughts and deeds to others or for leaving any record of their achievements behind them.

It is a sobering fact that our telephone industry, within barely three quarters of a century from its birth, is

*Mr. Power, USITA president, and president of General Telephone Corp., presented this paper at the 1957 convention of the Ohio Independent Tel. Assoc.

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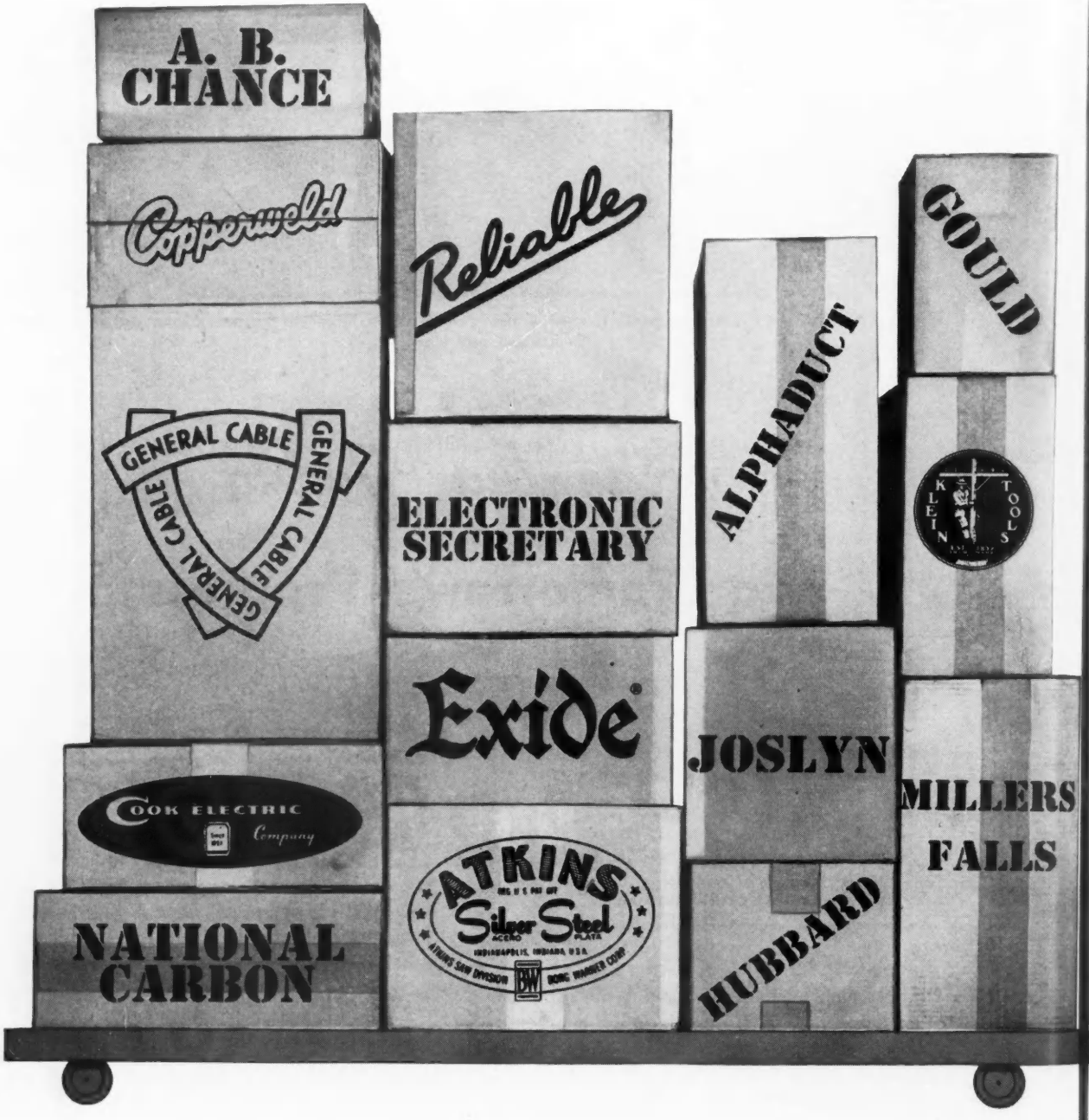

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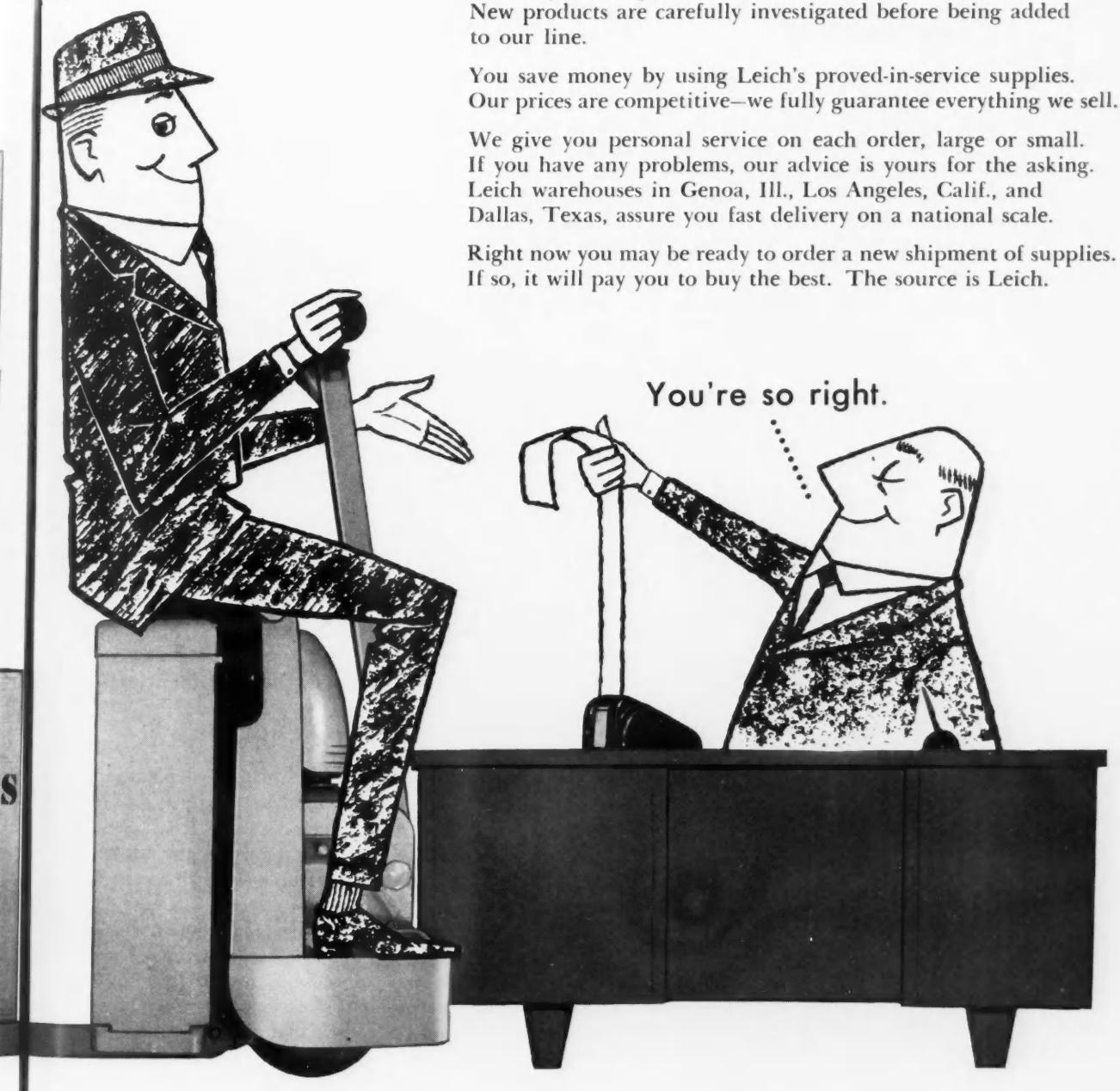

anufacturers of telephones, switchboards and related apparatus since 1907

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now handling by far the greater part of the entire load of really important personal and business communications in the United Staets. Bell and Independent companies are now handling daily telephone conversations in the order of two million calls — more than double the volume handled at the end of World War II in 1945. And there is good reason to expect that that load will again double within even a shorter space of time in the future. This is really something to think about and to plan for.

"A Firm Purpose — A Goal"

WHEN WE EVEN use the word "planning" we simply imply that we have a firm purpose, a goal. Otherwise we are not planning at all. We are only improvising. Fortunately for us, in the telephone business, there is no question about what our goal is for the future. The telephone industry has a destiny. It is just about as inspiring a destiny as any business enterprise could have. It is public service. And yet this very obligation of the telephone industry, to serve the public, imposes on us a special responsibility. We are, in a sense, trustees of the public interest. We can never lose sight of that, from top company management down to the very latest recruit on the industry's payroll.

In planning today for tomorrow's progress, we are confronted, at the very outset, with certain imponderables — things which we cannot now foresee, things which may or may not happen, and which, nevertheless, are bound to have a tremendous impact on our plans. Another war or economic recession, continued inflation, heavy taxes — all these are things we just have to take as we find them, from day to day, and stay constantly alert to any sign of change. We cannot, for example, plan for inflation. We have to plan in spite of it, knowing that to the extent that inflation continues and grows more severe, our planning is going to come under that much more pressure. Inflation has been defined as a state of affairs where we never had it so good or parted with it so fast. Anybody who has been operating a telephone company during the last few years knows just exactly what that means.

"WE KNOW that physical plant requirements of the telephone industry must expand greatly in future years. But what can be done in our planning to offset the increasing discrepancy between the dollars invested and the customers added?" — (S. W. Bell Photo.)

Yet, despite these imponderables, Independent te'ephone companies can lay their plans along certain lines which *can* be foreseen, if not controlled. Such matters as population trends, financial trends, and even regulatory trends are developments which we can follow closely. By careful adjustment, it is possible to take advantage of these trends, instead of finding ourselves trying to buck them. To put it another way, the nature of our telephone business is such that we are able to "cooperate with the inevitable" — as they used to say about the undertaking business.

As for population trends, it is unnecessary to repeat here the point which I have often made before and which is well known to you. I refer to the fact that our Independent companies are situated in a favorable position for future business growth, if it is properly cultivated. We have only to note subscriber station growth of many of your companies right here in Ohio to realize that such a development is already well under way.

Many Independent companies are today standing on the very toll road of the future! More and more business traffic is headed our way. But just like any toll road, we have got to make sure that quality and convenience of our service are well worth the charge we make for them. Otherwise, we may find our future traffic taking a detour.

Four Main Essentials

LOOKING over the general field of present planning for future progress, I would like to suggest four categories as worthy of special attention: first, plant requirements; second, financing requirements; third, revenue requirements; and fourth, new business promotion.

We have to recognize, of course, planning in business is not always a popular job. It has sometimes been called a systematic way of looking for trouble. And sometimes it can lead us into situations where we have to clean up after somebody else's planning. It is possible to land in a spot similar to the old mountaineer, who was being lectured by a judge for taking a shot at his own son-in-law. The old fellow admitted he was in the wrong. But he said: "Judge, none of this trouble was any part of my planning. You see at the time I took that shot at Jimmy, he wasn't my son-in-law at all. But by cracky, he is now!"

After all, in some degree, planning is everybody's job, in every part of the telephone business. Too often, I am afraid, some of us may be inclined to look on planning as the exclusive responsibility of top-level man-

agement — something for the front office to worry about. But when we get right down to hard facts, management is usually at the receiving end of the raw data, the statistics, the estimates, the timetables, and proposals which must be contributed in the first instance from the operating and specialized branches of the industry.

The engineers and research experts, the accountants, the financial and regulatory experts — these are the people who know from actual experience what can be done. True, the end result, the final decision on planning must be that of a company's management. But that usually takes the form of a translation and coordination of the ideas and proposals passed along by others without which management could not make sound decisions. So, I repeat, planning is everybody's job to a certain degree.

Plant Requirements

UNDER OUR first topic of plant requirements, one of the most challenging problems of the telephone industry is the increasing proportion of plant investment to subscriber station growth. We all know that telephone plant investment, in terms of dollars, has increased far more rapidly in recent years than the number of subscribers.

Just since 1950 the number of Independent company telephone stations has increased 42 per cent (from 6.3 million to 9.1 million). That sounds like a pretty impressive gain. The percentage of Bell System station gain was about the same for that period. But compared with that 42 per cent station gain since 1950, the Independent industry's plant investment, as a whole, has increased 120 per cent (from little over a billion to $2.3 billion). Bell System investment since 1950 has increased about 70 per cent.

How long will this disparity continue and what can be done about it? We know, of course, that physical plant requirements of the telephone industry must expand greatly in future years. But what can be done in our planning to offset the increasing discrepancy between the dollars invested and the customers added? Here is a problem that is going to give us trouble unless we find some good answers.

The most obvious approach, of course, would be to increase station revenues — through rates and supplemental services. I will have a little more to say about that later on. But is that the only answer? I am hopeful that our engineering and technical people will give us some help on this. If future plant designing and organization can take such advantage of improved technology that some of this difference between required investment and business growth can be absorbed, that could go a mighty long way towards whipping a most persistent and difficult planning problem for all telephone companies.

And we have good reason to expect that automatic processes will help to fill in this gap. Up to now automatic developments have been considered chiefly from the standpoint of service and operating efficiency and economy. But in the future we may have to rely on automatic plant improvements to give our companies more mileage on the investment dollar per station. We hear of promising things in the field of electronic switching and of multiple use of existing plant facilities, through time pulse and other improved techniques. The industry is going to need all of this kind of help it can get to make its plant dollar go further and carry more of a load in the future.

MANY COMPANIES are out of business today because they couldn't keep up with developments in their field. "Hand-to-mouth" company, forced to think of earnings first and customer second, must let quality slip, forego product improvements because of expense of research and retooling. Employes suffer, too, through layoffs, loss of job security, worsening of pay and working conditions.

After all, this is in keeping with technical trends in other industries. A director of a national packaging association said recently: "The most expensive thing in the world today is a pair of hands." This implies, of course, more automation whether we like that word or not. But it will not mean any reduction in employment opportunities. On the contrary, it should mean more intelligent and responsible use of the pairs of hands which our industry must hire in growing numbers in coming years. I believe it was the late Phil Murray, former president of the CIO, who said, in 1951, that he did not know of a single, solitary instance where a great technological gain had taken place which did not eventually increase employment opportunities.

Financing Requirements

MOVING NOW to my second point — planning for financing requirements — we come again face to face with the bugaboo of inflation. More recently this has been coupled with the federal government's efforts to control or at least check inflation through its so-called

"tight money" policy. I would not be so bold as to say that either inflation or tight money is here to stay, over the short run or the long run. But I do know that in our financial planning for financial progress tomorrow, we have to make allowances for both.

Most of the financing for the vast amount of necessary future plant will have to come from outside of the industry — meaning new capital. In the Bell System, as a whole, the construction budget of $2.2 billion for the past year required new capital financing in the amount of $1.3 billion. In a recent rate case in New England, a Bell System company estimated that two-thirds of capital for construction planned for the coming year would have to be raised from outside of the business.[1]

Our Independent companies will likewise have much need for new financing. And these demands must be met at a time when all industry is competing in the money market for increasingly scarce investment dollars.

Yet, there is a silver lining. Unregulated industry is likely to have a more difficult job attracting equity capital at the higher cost of money, than it has experienced in the past. Many investors today are adjusting habits which they acquired over the past ten years, when so much emphasis was placed on investment in common stocks of a dynamic character as compared with public utility securities.

During the past year, it has become evident that a considerable change has come over the earnings prospect of other industries. So, many investors are now turning to bonds with yields high enough to compete proportionately with stock dividends in other lines. And in this period of change, Independent telephone companies and other public utilities should be able to demonstrate that they possess special advantages of prospective growth and stable earnings which will appeal to the less speculative investors. Even where company financing takes the form of bond issues and bank loans, the favorable characteristics of the industry should be a help. After all, every kind of business has to pay relatively more for money these days. We even hear talk in Washington about boosting the interest rate on REA loans.

Here again much depends on adjusting our financial planning in the light of the changing mood of the investor. The Independent telephone business has much to offer in the form of assured business growth, continued technological progress, and the upward standard of living and new business opportunities. The Independent companies have a selling job to do, of course, in making the investor aware of these opportunities.

"TELEPHONE companies and other utilities cannot go on indefinitely operating on a cost basis of bygone years, erected on obsolete dollar values, simply because it makes bookkeeping convenient and keeps rate regulation mathematically in balance . . . "

Regulatory Developments

BUT EQUALLY important, we must demonstrate to the investors that future telephone rates will be sufficient to allow Independent companies to cover their revenue requirements. This brings us to my third point, which deals with regulatory developments. It may seem a little unusual to speak of planning for regulatory developments. The regulatory authority is in the hands of the state commissions and admittedly beyond the control of the industry itself. Yet there is such a thing as regulatory planning and it is becoming increasingly important.

Assuming, as we have noted before, that present inflationary trends will be with us for awhile at least, it is only being realistic to expect that we are going to have to have periodic rate increases. At the present rate of depreciation and of expanding costs, it may well be that companies will find it necessary to revise telephone rates at 5-year intervals or even oftener. This is not a very pleasant suggestion to make. But as Will Rogers used to say about the farm problem, maybe the time has come to grab the bull by the tail and look the situation right in the face. Much of the difficulty about telephone rates over the past few years can be traced to a certain reticence and unwillingness of companies to admit the need for rate increases until they were long overdue.

Planning for rate cases should include not only careful advance preparation of cases for presentation, but also a suitable timing schedule to get the actual benefit of the rate relief while it is still adequate, and not so long afterwards that it becomes too little too late. It is only common sense to anticipate deficits in earnings instead of doing nothing until they actually occur.

A gas utility official, who was recently charged by a Federal Power Commission official with "jumping the gun" because his company filed for a rate increase before a deficit in earnings actually arrived, told a Civil War story of a Union General who had to confer with

[1] *Testimony for the Southern New England Telephone Co. before the Connecticut commission, March* 19, 1957. *Estimated construction was* $1.34 *million, new outside capital requirement was* $95.4 *million.*

his staff about a hopeless situation in which they found their troops. It was finally agreed that a general retreat would be ordered the next day. Then one grizzly old veteran spoke up: "General," he said, "would it be all right if I got started back tonight, on account of I'm lame already and I can't keep up with the rest of you fellows after you get started!"

One other rate case factor, which may have to be faced courageously in some of the other states, involves the age-old argument between value and cost. I can speak about this freely here in Ohio, because it is the only state where reproduction cost must be given exclusive and clear-cut recognition in the rate fixing process. As to other states which follow a variety of different methods, I do not believe our Independent telephone people are dogmatic about any particular formula, as long as their rates permit them to do the job they are supposed to do. After all, formulas in themselves are not all important, it is the proof of the pudding that counts, and telephone people have to eat just like anybody else.

But with inflation hounding us, year after year, we can get awfully weary of those who insist that this whole regulatory argument can be permanently swept under a rug of poltical expediency, nailed down by academic theories that are not working out. It is pure cynicism to contend that a telephone company should go merrily on doing business at the same old rate-making stand, based on strictly original cost accounting which completely ignores the growing erosion in the purchasing power of the dollar. A cynic has been defined as one who knows the price of everything but the value of nothing. At times it seems that some of our professional economists in the public utility field could qualify under that definition.

Telephone companies and other utilities cannot go on indefinitely, operating on a cost basis of bygone years, erected on obsolete dollar values, simply because it makes bookkeeping convenient and keeps rate regulation mathematically in balance. In planning future rate cases, therefore, your Ohio example may move telephone companies elsewhere to press for a showdown on this fundamental problem. For a long time, telephone companies in other states have tried to compromise and cooperate with patchwork of regulatory adjustments, which seek to cover up basic defects of earnings deficits. But if inflation keeps on getting worse, the industry's duty, not only to the investor but also to the subscriber, may be to call for a re-examination of this whole setup with a view to bringing yesterday's academic theories into line with present-day realities. That is what seems to be happening in New York state right now.

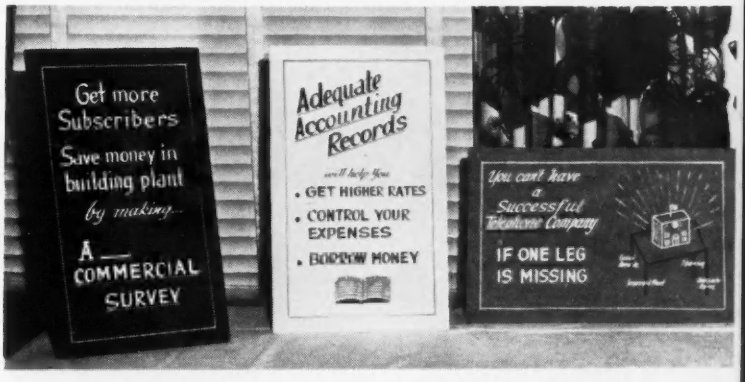
Promotional Requirements

MY FOURTH point has to do with planning for promotional requirements. Some telephone companies have done some enterprising things along this line in recent months. But it is only a start in the direction of what must be done to make two revenue dollars grow where one grew before — through the promotion of more business in the form of new services and telephone appliances. I am not going to try to tell you what these new appliances are. You are probably already well informed on that. In any event, you can walk outside and see for yourselves the excellent equipment exhibits at this convention, and I hope you will.

But it is a fact — and an encouraging fact, if we want to look at it that way — that the real market for new telephone service products remains very much to be developed. Promotional campaigns for color telephones, extensions, and multisubscriptions are catching on. Yet, we still have to grow new subscriber markets for other special services and appliances which are coming along faster than they can be sold.

In planning such promotion, the individual company can get much assistance from statewide and industry-wide effort, including the advertising programs. But there are still some things the individual companies have to do on their own. Local markets for such new products are not going to develop by themselves.

Each Independent company knows, or should know, what are the special characteristics of its own service area. Good planning would suggest surveys of the exact


Get more Subscribers
Save money in building plant by making...
A — COMMERCIAL SURVEY
Adequate Accounting Records
will help you
• GET HIGHER RATES
• CONTROL YOUR EXPENSES
• BORROW MONEY
You can't have a Successful Telephone Company
IF ONE LEG IS MISSING

SOME telephone companies have realized the value of promotional planning — but "it is only a start in the direction of what must be done to make two revenue dollars grow where one grew before . . ."

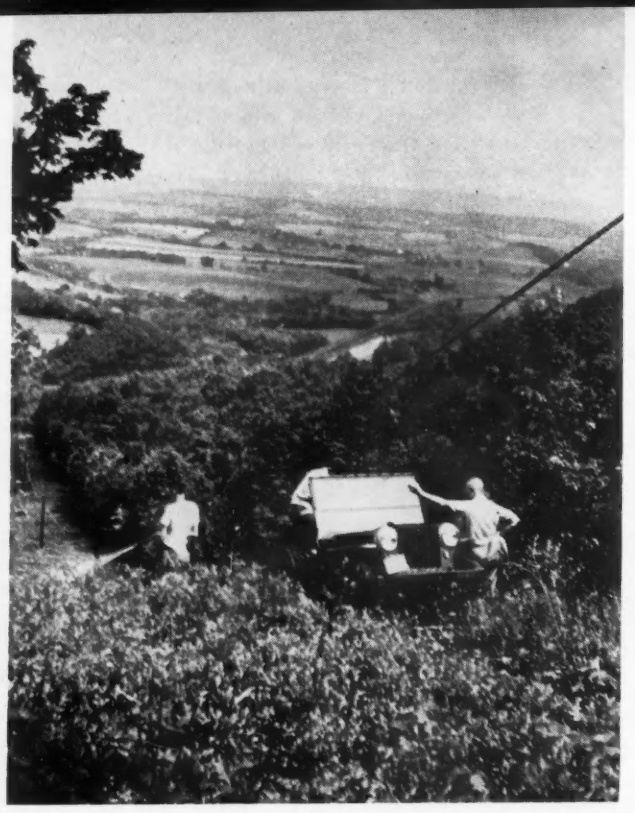
types and varieties of customer establishments in each area. You may find that there is a certain kind of industrial plant, or institution, or other area customer which has a particular need for special telephone services or appliances now available, or which could be adopted.

Of course, co-ordination will increase the effectiveness of such efforts. When local companies are able to follow up national and other publicity programs, such as our USITA operations, with parallel efforts at the local level — there is bound to be a cumulative effect. And it will pay extra dividends of public relations benefits to all who participate.

In conclusion, I find that I have talked so much about problems, that some of you might get the impression that I look on telephone business as one big headache. But that is only because I have stayed on your convention theme of planning. And what is planning, after all, except the problem of dealing with problems.

As for the brighter side, I yield to no one in my own optimism about the great future of our Independent industry and all who take part in it. Remember what I said a few moments ago about our destiny. I believe moreover, that these problems will be solved, even though we all know that their places will be taken by other problems.

That is part of the challenge and satisfaction of the Independent telephone business.



AS PART of the continuing effort to simplify and economize operating procedures, Bell Laboratories have investigated chemical control of brush along telephone rights-of-way. Some of the chemicals ordinarily used for weed control also kill the heavier, woodier plants. Extensive field tests indicate that three of these new plant-killing chemicals can do an effective job at lower cost than the corresponding annual cost for manual cutting.

By O. A. HANNA*

Chemical Brush Control

WITH THE issuing in 1955 of a specification for brush-control chemicals to be used by the Bell System Companies, some ten years of extensive Laboratories' study was culminated successfully. The specification sets requirements for three chemicals used to control roadside and right-of-way brush, namely "Ammate" (ammonium sulfamate), "2, 4-D" (various esters of 2, 4-dichlorophenoxyacetic acid).

The Laboratories' investigation for a method of controlling unwanted brush by chemical means was begun in April, 1945, in response to a request from the American Telephone and Telegraph Company. Because of the extension of rural aerial telephone plant where minimum ground clearances were exposed, it is important to keep the underbrush from coming into contact with the wires. The desirability for keeping construction and maintenance cost low provided a very considerable impetus for investigation.

Prior to the development of brush-killing chemicals, it had been the practice to clear brush from rights-of-way by manual cutting with axe and brush hook or by other mechanical means. Such cutting, which was necessary every two or three years, stimulated growth of many new shoots for each shoot that was cut. After several such operations, many rights-of-way became virtually impenetrable. Since annual shoot growth often exceeds six feet, the hand cutting of brush, while necessary, was at best a costly practice.

In 1945, two chemicals, Ammate and an ester of 2,4-D, were being used with considerable success for the suppression of weeds. It was proposed that these two chemicals might also kill brush. Several test plots were established at the Chester, New Jersey, field laboratory, and many different chemical materials were tested. Periodic examination of these plots showed Ammate and 2,4-D to be the most promising. At sufficiently high concentrations, the Ammate, a non-selective chemical, killed all vegetation, including woody shrubs and grasses. The 2,4-D, however is a hormone of synthetic chemical — one which is actually translocated or carried into the plant's internal system. It was more selective in its action; broad-leaved plants were killed, but grasses were not harmed materially. It was noted also that while some species of shrubs were killed, 2,4-D had little effect on certain other species.

In the next two years additional test plots were laid out and observations were made of full-scale commercial applications on rights-of-way of both telephone and power companies. By the fall of 1948, it was evident that chemical brush control offered very definite promise. Another new material, 2,4,5-T had become available commercially and was reputed to be more effective against certain of the hard-to-kill species, such as oak, ash, hickory, and red maple. It was at this time that the Laboratories' studies were accelerated. Because of the considerable difficulties encountered in obtaining data accurate enough for the specialized needs of the Bell System, the decision was made to extend the test program. In 1949, following additional test-plot work at Chester, two full-scale field trials were planned in cooperation with the Bell Telephone Company of Pennsyl-

* *Mr. Hanna is a member of the Outside Plant Development Department, Bell Telephone Laboratories.*

vania and the American Telephone and Telegraph Company. The field trials had been planned as continuing projects to be of sufficient duration to provide comparative data on the proper programming of treatments, relative costs, and effects of various sprays and spraying methods over a five-year period. While the broad purposes of the trials were quite similar, the emphasis in the second trial was placed on relative cost and the effectiveness of chemical brush control as done by a regular commercial contractor.

The first test right-of-way was located about five miles north of Hamburg, Pennsylvania in rugged terrain which drops from an elevation of 1300 feet to 500 feet in less than three-quarters of a mile (see headpiece). The line was cleared in the fall of 1949 and three different methods of treatment were applied in the spring of 1950. In July of 1950 a plant inventory of the test area was made and compared with an original inventory. All of the treatments were termed successful with Ammate spray showing up particularly well. It was definitely established that properly applied, any of the materials tested would do an excellent job in establishing brush control by chemical means.

The second test area selected was a 6.3-acre section in the Philadelphia-Allentown toll cable right-of-way north of Lansdale, Pa. In September, 1949, 4.1 acres were treated with a 50-50, 2,4-D/2,4,5-T water borne spray and 2.2 acres were treated with Ammate. Untreated control areas were left in each plot. Examination the following year indicated that something had apparently gone amiss. The brush on the Ammate area appeared to have a high degree of kill, but the results on the 2,4-D/2,4,5-T-area were very disappointing; the kill was less than 15 per cent. The poor kill was attributed primarily to the lateness of the season. A heavy frost had occurred several weeks after application of the spray, and the plant processes necessary to translocate the chemical down the stem and into the roots of the plants had apparently been arrested by the frost. It was necessary, therefore, to respray this section completely in July, 1950. The section treated with Ammate was in excellent condition, but showed some resprouting of resistant species. This section was not sprayed in 1950 but it was resprayed in July, 1951. Inspection of the right-of-way in 1953 showed better than 90 per cent control on both areas. In 1954 the brush in the untreated control areas was cut and the stumps were treated with 2,4,5-T in oil. This brush, which had not been cut since 1949, had attained a height of between 12 and 18 feet, and in several places was above the cable and strand. By comparison, the sprayed areas were under excellent control with a healthy growth of annuals and grasses having replaced what would have been impenetrable brush. The few shoots remaining were sprayed from a knapsack tank. The test area has now been declared completely under control, and it is believed that an occasional inexpensive spot spray from knapsack tanks will be sufficient to keep the area under control in the future.

Several items of importance emerged from the work on the two test lines: First, it was demonstrated that over a six-year period exceptionally good control of an area may be obtained with one complete treatment, one partial treatment and one spot spray. Second, Ammate appeared to be more effecitve as an initial spray than the 2,4-D/2,4,5-T treatment. However, the advantages of Ammate were somewhat nullified by its tendency to corrode spraying equipment. A thorough cleaning of all tanks, pumps, and associated equipment was found to be imperative after each day's operations. Finally experience indicated that the best time to apply a foliage spray is during the growing season, April through July, when movements of fluids between the foliage and roots of the plants tends to translocate the chemical throughout the plant.

The second trial near Lansdale, Pa., also yielded some important information about the relative costs of chemcial control versus hand cutting. Over the six-year period of the test from 1949 to 1955, the average cost per acre per year was still somewhat higher than the corresponding average for manual cutting. However, once the brush was eliminated, the yearly cost of maintenance by chemical methods dropped to about eight dollars per acre; which is approximately twenty per cent of the cost of hand cutting. These figures apply only to a small-scale field trial in one section of the country, but they do indicate the great savings to be realized through the practice of chemical brush control on telephone rights-of-way. — *O. A. Hanna.* (*Reprinted from "Bell Laboratories Record," May* 1956.)

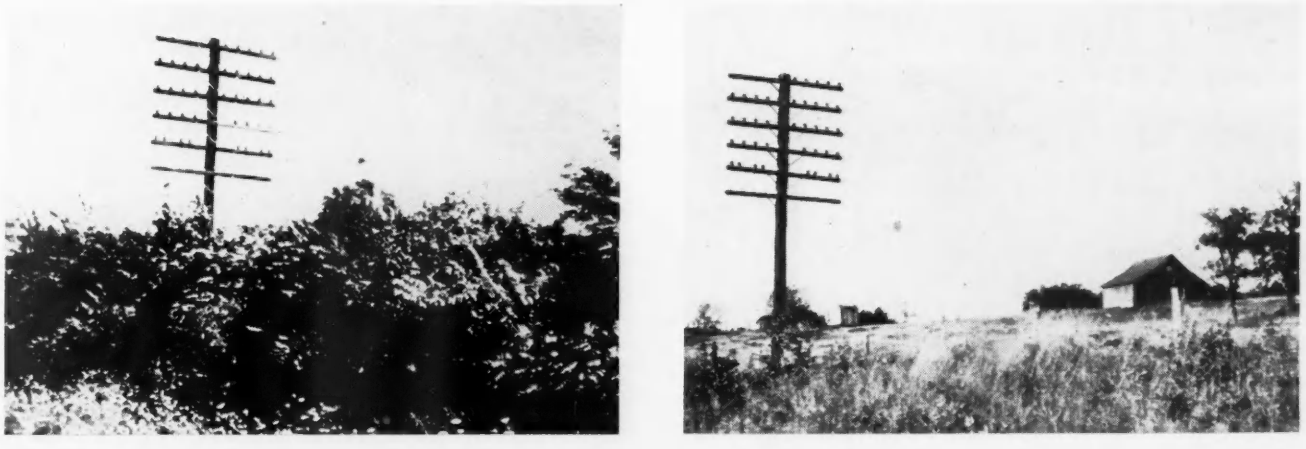


FIGURE ONE:—(left) Roadside right-of-way in Pennsylvania test showing undergrowth of brush before chemical spray; (right) same area after control by chemical methods.

Planning plant practices

By T. DEWITT TALMAGE*

IN PART II of his article on plant personnel problems, Mr. Talmage discusses: (1) reference books on elementary and intermediate physics; (2) the technical worker shortage and (3) "grading up" present workers.

Elementary Physics

FOR THE beginner there is an interesting choice in introductory or elementary physics textbooks, carrying self-explanatory titles, a few of which are "Physics Made Easy," by L. T. Masson; "Physics Made Simple," by I. M. Freeman; "Physics Without Mathematics," by C. E. Bennett; "Physics Tells Why," by Overton Luhr; and "Physics for Everybody," by Germaine and Arthur Beiser.

At the high school level there is an equally wide choice of physics textbooks. A visit with your local high school science instructor will furnish you with information about up-to-date, well-illustrated physics textbooks.

The high school in the writer's community, along with some 3,000 other high schools throughout the country, uses a book with a high degree of interest appeal entitled: "Modern Physics," written by three well-experienced teacher-authors, Messrs. Dull, Metcalfe, and Brooks.

This textbook is copiously illustrated. There are 852 illustrations made up of 655 line drawings, 175 photographs, 20 cutaway diagrams and two four-color plates. Every illustration helps to teach a physical principle. Twenty-five percent of the 172 pages are devoted to explanations of magnetism and electricity of interest to communication workers.

**Educational manager, Kellogg Switchboard & Supply Co., Chicago 38, Ill.*

Intermediate Physics

FOR THOSE who desire to review physics at the technician's level, the next step above standard high school physics, a book to start with is "Introductory Applied Physics," written by Messrs. N. C. Harris and E. M. Hemmerling.

This book presents physics as an indispensable tool of industry, with emphasis on present-day applications. Over 30 percent of this book's 729 pages is of direct interest and concern to communication men whose duties involve knowledge of electrical principles.

For example, this book includes an entire chapter on principles of modern electrical communication. In the preparation of this chapter Messrs. Harris and Hemmerling were assisted by Mr. D. I. Cone, transmission and protection engineer of the Pacific Telephone & Telegraph Co. The treatment, style, and practicality of approach are simple and direct. The illustrations, 601 in number, text material, and problems all treat situations which arise on the job.

Technical Worker Shortage

INDUSTRY'S steady need for many kinds of skilled craftsmen, technicians, engineers, and scientists, each of whom require various degrees of understanding of the principles and applications of physics, is so great

that the demand has outrun the supply in many areas.[2]

As long as the bottom of the barrel is being scraped for employees with interest, education, and experience in technical work — the very same kind of skills, knowledge, and experience that are also widely needed in the presentday grade of telephone engineering jobs, as well as telephone plant operation and maintenance jobs — then the law of supply and demand has deposited another knotty problem on the doorstep of the telephone business.[3]

Present indications are that this shortage of technical workers will prevail for some time yet to come because, among other reasons, there are fewer youths reaching working age than there were just a few years ago. This results from the fact that there were not as many babies born in the 1930's when employment and income were low.

Reports of the United States Department of Labor emphasize that because our country's economy is based on a complex and constantly evolving technology, it could not function without an adequate supply of skilled mechanics and technicians. Within at least the next 25 years, the discoveries of modern science will make it necessary for almost every worker to possess a certain amount of skill based on training and experience — a point reached long ago in public utility enterprises in a substantial percentage of jobs.

Trained Manpower Forecast

TODAY THERE are but 8½ million skilled craftsmen[4] and 6 million professional and technical workers in a total civilian labor force of 65 million. Considering the responsibilities the Nation will have to face in the future, this figure is very low, according to specialists who have studied this situation.

Moreover, our country's manpower is exhaustible and it is limited. Whether we like it or not, we have a maximum beyond which we cannot go. We cannot create a larger working force by wishing it, but we can create a more highly skilled work force by consciously developing it.

The need for skills in industry is paralleled by the need for them in our Armed Forces. Thus, for every three persons or technicians that the Armed Forces require, only two are currently available.

Advances in defense mean more and better technicians are needed, more and better skilled workers are needed, both in industry supplying military equipment and in the Armed Forces.

What does all of this mean to the telephone industry?

Applying rules based on averages to a specific case is always dangerous but in this instance it's safe to say the telephone industry must actively compete for desirable manpower with other employers who also seek workers with the same qualifications as those required in the telephone business. Competition for top-notch men may be severe.

MANY COMPANIES, both inside and outside of the utility field, are exploring solutions to a "tight labor" situation through various types of company-sponsored refresher courses and practical training classes. In the above photograph, JAMES R. MONTOYA uses a simplified "breadboard" model of a portion of a dial subscriber's line circuit to demonstrate the basic principles of switching system operation to inside plant maintenance trainees.

Training Indicated

WHAT ABOUT the widespread problem of increasing the usefulness, efficiency, and versatility of present employees by "grading up" workers already on the payroll? Many companies, both inside and outside of the utility field, are exploring this solution to a "tight labor" situation through various types of company-sponsored refresher courses and practical training classes and company-encouraged home-study programs on both business and technical subjects to bolster up on-the-job training work.

In some such cases it is being found that the present workers must become acquainted or re-acquainted, as the case may be, with basic precepts and essential fundamentals which can be used as a broad base upon which to build a firm understanding of the subject. Training in technical or semi-technical subjects may involve an abbreviated review of certain branches of physics.

Conclusion

THE TELEPHONE plant engineering, construction, and maintenance articles published in this and past issues of this magazine are good examples of the exposition of practical physics as applied in the communica-

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[2] *"New Engineering Manpower — A Critical Utility Problem," by Walter J. Seeley, Electric Light and Power, Vol. 34, No. 2, pp. 96-98, inc., January 15, 1956.*

[3] *"Shortage of Technical Workers," by T. DeWitt Talmage, U.S.I.T.A. Plant Committee paper, Telephony, Vol. 145, No. 23, December 5, 1953, pp. 20-23, 48 and 49.*

[4] *"The Skilled Labor Force," A study of Census Data on the Craftsman Population of the U. S., 1870-1950. U. S. Dept. of Labor, Bureau of Apprenticeship, Technical Bulletin No. T-140, April, 1954. 52 pp. Published by the Superintendent of Documents, Government Printing office, Washington 25, D. C. Price 45 cents.*

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tion industry. This information constitutes a supply of intellectual capital — the knowledge of how to do things — which is just as important as money in the bank.

There is a saying that goes: "The man who knows *how* will always have a job, but the man who knows *why* will be his boss." Perhaps today's demanding conditions justify adding something else to this thought: that on top of knowing how *and* why, the worker who also knows *when* to act is the most valuable man of all! —*T. DeWitt Talmage.*

Selected References

For ordering information on References 4, 5 *and* 6 *write Managing Editor, "Telephone Engineer & Management," 7720 N. Sheridan Rd., Chicago 26, Ill.*

(1) "Fact Book on Manpower," Bulletin No. 1171, 88 pp., September, 1954. U. S. Department of Labor's Bureau of Labor Statistics. Published by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Price 50 cents.

(2) "Trends in the Employment and Training of Scientists and Engineers," National Science Foundation, 23 pp., May, 1956. Publisher is the same as that in reference (1). Price 20 cents.

(3) "Engineering and Scientific Manpower in the United States, Western Europe, and Soviet Russia." Joint Committee on Atomic Energy, 84th Congress of the United States, 2nd session, 85 pp., March, 1956. Publisher the same as reference (1).

(4) "Visualized Physics," (book), by A. Taffel, 408 pp., 1955.

(5) "Modern Physics," (book), by C. E. Dull, H. C. Metcalfe and J. E. Williams, 712 pp., 852 illus., 1955.

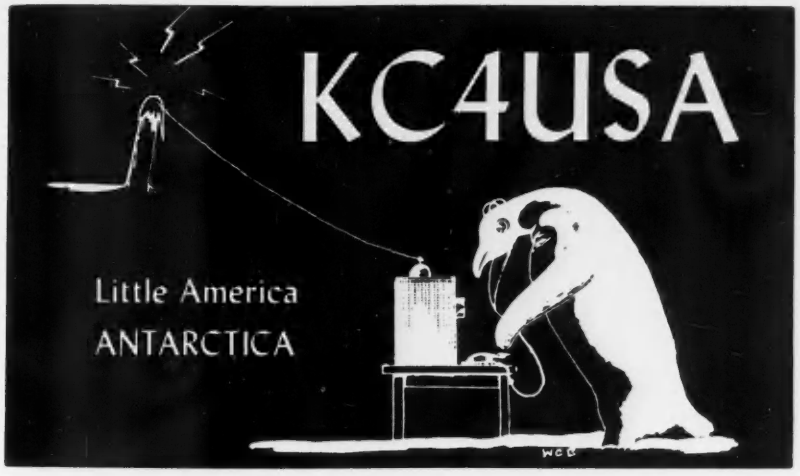
(6) "Introductory Applied Physics," (book), by N. C. Harris and E. M. Hemmerling, 729 pp., 601 illus., 1955.

(7) "Physics for Electronics Technicians," (Condensed and simplified from standard physics texts. Whenever practicable, problems and examples illustrating electronic equipment, phenomena, and concepts have been used). 378 pp., 213 illus., 1951. Prepared by U. S. Navy Training Publications Center of the Bureau of Naval Personnel. Publisher the same as reference (1). Price $1.25.

(8) "Some Engineering Considerations in the Design of Telephone Systems to Serve Predominately Rural Areas," by T. J. McDonough and Warner T. Smith, American Institute of Electrical Engineers' Transactions, Vol. 73, pt. I, pp. 208-214, incl., July, 1954.

Worth Writing For

WRITE Readers' Service Department, TEM, 7720 N. Sheridan Rd., Chicago 26, Ill., for your copies of: (1) Morrison-Pelsue brochure describing the MoPeCo Manhole Ventilating Heater. (2) U. S. Instrument Catalog describing U. S. Line of maintenance free PBX's; (3) York-Hoover Bulletin 942 on new service truck body.



"Will You Accept The Charges?"

By GEORGE FORBES*

LONG-DISTANCE operators are carefully trained . . . "The voice with a smile" . . . "The message must go through" . . . "We're a service organization and the customer is always right" . . . All the hours of painstaking indoctrination were condensed as if on a single slide the night Miss Jones handled a "Collect Call" from the South Pole.

IT WAS 2.00 A.M. in Rochester and Glens Falls, New York. Just an ordinary day, with another coming all too soon. Naturally everyone was asleep . . . everyone, that is, except the telephone operators and a small, unique fraternity known as "radio hams." In this particular story the lights burned brightly in the "shack" of Mr. William Bellor of Rochester, New York, licensed amateur operator of station W2MG.

With the assurance that comes only from experience, Mr. Bellor keyed-in his phone-patch, dialed "110" for Long Distance.

"I would like to place a collect call to anyone at the residence of Mr. — White in Glens Falls, New York. Tell them I have the South Pole on the line."

Long distance operators are carefully trained . . . . "the voice with a smile" . . . . "the message must go through" . . . . "we're a service organization and the customer is always right!" All the hours of painstaking indoctrination were condensed as if on a single projector slide, almost blinding Miss Jones by its clarity. This was different.

Forgetting to close her key, she turned to the girl next to her.

"Now I've had it! This guy thinks he's Santa Claus, wants me to wake up a family in Glens Falls to talk to the North Pole!"

Thanks to the open key, Mr. Bellor was able to cut in, told her it was the *South*, not the North Pole, gave a further explanation, and the call went through. As Miss Jones monitored the connection, she could feel the moisture on the key handle from her perspiring fingers.

"Mom, you can't imagine what it means to me to talk with you and Dad!" Could this clear, strong voice really be coming from Marie Byrd Land?

"Son, this sure is a wonderful world!"

No one on the board that night mentioned it as the tears flowed freely on the key shelf at Miss Jones' position. And Mr. Bellor had an extra warm glow when he turned in that night.

* * *

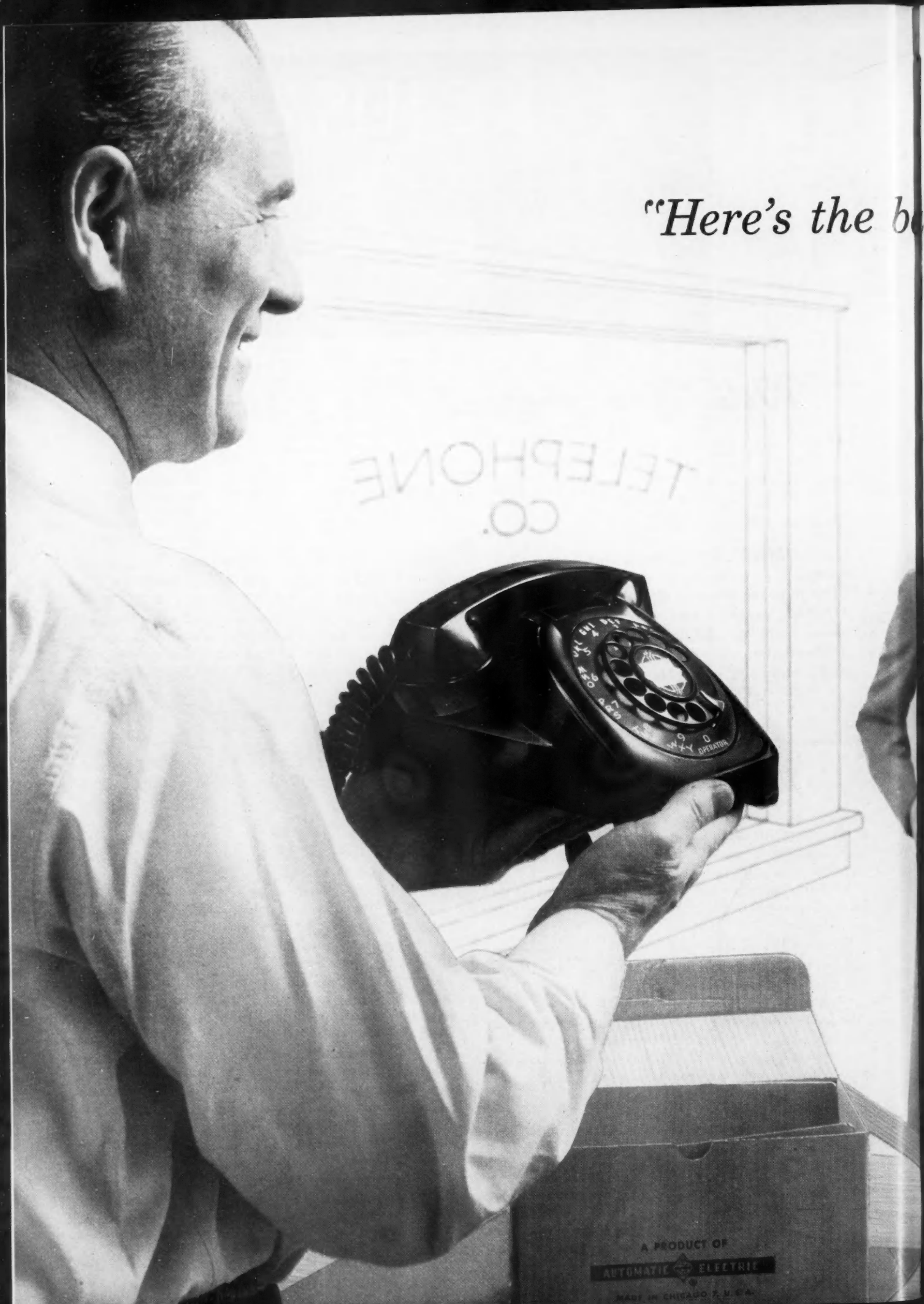
There's nothing really new in this little story. It has been repeated with different actors hundreds of times. I first knew of it when a similar contact was made by Mr. Bellor for friends of mine, the Bentley family of Rochester, January 24th last.

Charles Bentley had been in my classes as a student. Even in the early grades he indicated unusual aptitude in things scientific. Now he is part of the group of trained scientists representing twelve nations stationed near the South Pole for the International Geophysical Year.

Mrs. Bentley and other members of her family recalled the unexpected thrill of that truly long distance call. Neither party to the conversation had made any advance preparations. On that particular evening Mr. Bellor had been "rag-chewing" with one of the Navy amateur operators at station KC4USA. Suddenly he was asked, "Can you set up a phone-patch so this boy can talk to his family in Rochester?"

Bentley and others in his party left the United States last October. Up to the time of the radio-telephone con-

**Mr. Forbes is Publications Editor, Stromberg-Carlson Co., Rochester, N. Y.*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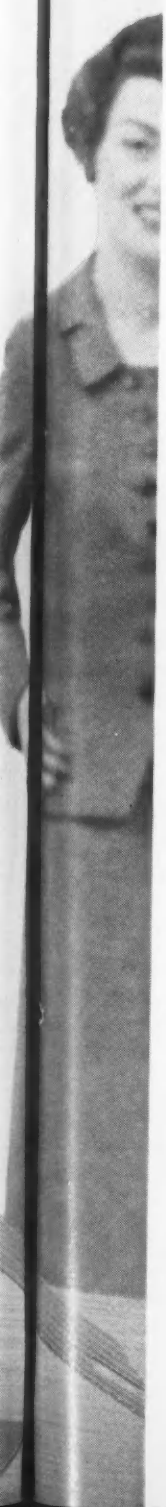
beauty that'll build our business, Mary!"



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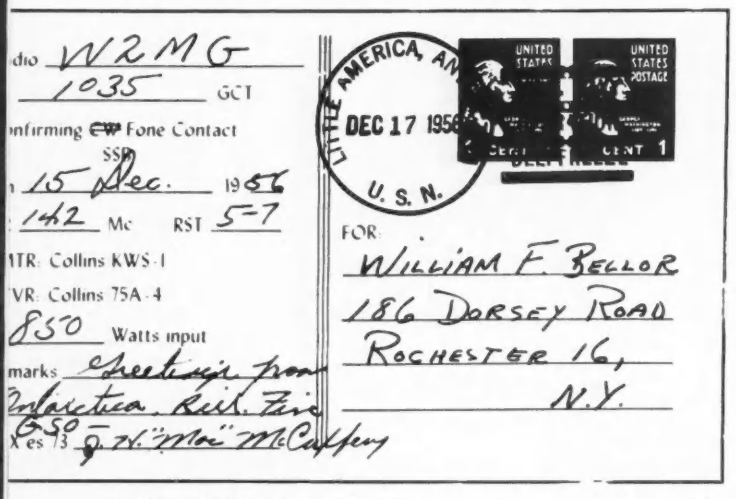
tact no letters had been received in Rochester to indicate that mail — including the Christmas packages — had arrived. These scientists will remain 14 months in the Antartic; the gruesome period, when the sun disappears for good and the terrible loneliness comes imperceptably like a creeping paralysis, was yet to come.

Life At the "Little America" Base

ACTUALLY, on that January day when the Bentley call was completed, the temperature in Rochester was a bone-chilling —16°, while Antartica was experiencing a balmy 33° above zero, with the "summer" sun turning the surface of the volcanic cone on which the Little America base is built into an oozy slime, hampering the Sno-Cats transporting the expedition toward Marie Byrd Land.

Even when weather is auspicious, there's little variety in the endless great white prairies, broken only by treacherous crevasses of unknown depth. Now that our Spring has brought black Winter to this region, the



"QSL CARDS from almost every country in the world made me realize how small the world now is. While jet planes are warming up for take-offs, the amateur radio operator may have relayed a message to a G. I. in Japan."

group will be practically immobilized in their box-like pre-fabricated huts.

Every physical safeguard for health and well-being had been provided. Only in the realm of personal morale is there a danger that the long separation from loved ones at home, the worries that fatten on lack of direct communications, coupled with the agonizing monotony, will tear at men's souls. There was a wistful note in the voice of the amateur contacted on March 7th as he said, "The last boat has just left. We're on our own 'til September."

This loneliness has been clearly recognized by the Navy, and led to the activation of the four amateur stations now operating in the South Polar region. Licensed amateurs all over the world give freely of their time and talents. Telephone Companies are only too glad to cooperate in offering their facilities for completing calls at this end.

"World-Shrinking" Hobby

BUT BACK to our amateur in Rochester. William Bellor obtained his first license in 1920 at the age of 13. Mrs. Bellor — as a defense mechanism, she insists — also has her license. The South Pole contacts (he made his first in the Spring of 1956 and they have been almost daily in the last few months) are just part of his world-shrinking hobby.

On the night that my son and I visited him in his "shack," two-way contact was made with an embassy official in Haiti. This man was unable to contact Denver, Colorado, with a message of critical import; the message was taken down and passed along. A man in Miami wanted to report to a Rochesterian on crowded conditions in Florida's winter capitol; he was advised to use the telephone for his message. The real amateur supplements, but never competes with, regular communication services.

My boy particularly enjoyed a 15-minute "gab fest" with an amateur named "Cliff" at station KG1FR in Greenland's "Riviera." Cliff said, among other things, that they have to keep the shades partly closed all during Spring; their eyes, so accustomed to the gray-black of the 6-months winter, cannot stand the sun when it first returns.

One of his calls — again using regular telephone distance lines — patched the South Pole, via Rochester, to Newportville, Pa. A young lady, Stateside, was able to talk to her fiancee at the base located only 40 yards from the geographic pole; events at each end had seriously affected their wedding plans. During the call, a new date was set, invitation lists checked, and the happy pair arranged to meet each other at a mid-way point and fly back together for the ceremony.

Behind The "Iron Curtain"

SOMETIMES an extra challenge comes along: acting as central exchange point for contact between a plane flying over the North Pole and personnel stationed at the South Pole. I asked him if he had ever penetrated the "forbidden" lands under Russian control.

"Iron Curtain? We hop over it regularly," replied Mr. Bellor. The Russian amateurs are very careful in what they say — weather, I hear you well, but never an address. In Poland and Czechoslovakia, however, there's a new freedom of speech. If the operator on the other end has a smattering of English, there's no limit to conversational possibilities.

Sometimes there's cruel irony along with the satisfactions. Mr. Bellor has delivered countless messages and arranged dozens of two-way live calls with other people's sons, stationed in some far-off land. Yet when his own son was on service duty in Korea he was unable to talk to him, for Korea was and still is "off limits."

Before we left — after most were long asleep — we had seen QSL cards from almost every country in the world. It made you realize once more how small the world now is. While supersonic jet planes are warming up for their initial take-off, the amateur radio operator may have discussed swimming on the "world's longest beach" at Dhahran, Saudi Arabia; or relayed a message to a G. I. in Japan.

Back home again we took off our shoes before stealing upstairs. My boy — starry-eyed — knew he couldn't get to sleep easily, and even as we both were tossing on our beds the phone rang.

"It's Bill Bellor. I now have the South Pole again. Do you want to listen?"—*George Forbes.*

A TELEPHONE ENGINEER OPERATING MANUAL

OUTDOOR BOOTHS (Part V)

By JOHN S. REED

Part V of TE&M's Operating Manual on "Outdoor Booths" discusses: (1) Directory shelves or racks; (2) Half-length outdoor telephone booths; and (3) Maintaining outdoor booths.

Directory Shelves or Racks for Outdoor Telephone Booths

FOR SMALL directories, the usual practice is to attach the directory to a chain suspended from under the paystation shelf. A directory binder is often used to protect the directory from excessive wear.

Large and medium size directories, however, are not too well adapted to hanging from a chain. The use of a directory shelf or rack is preferable in such cases. This arrangement is a great convenience to the public and helps prevent damage to the pages from awkward handling of the heavy directories.

Figure 39 illustrates a typical directory shelf arrangement in an outdoor directory booth in a large city. The telephone books are mounted in a fastener on the flat shelf and can be opened flat for ready reference. This type of booth may be included in groups of standard outdoor booths. The standard booths are not equipped with directories, the directory booth being used by paystation patrons desiring to consult the telephone directory. This arrangement is intended to reduce the cost of providing every booth with a directory and at the same time reduce vandalism and theft to a minimum.

For the types of booths illustrated in *Figures* 27 *and* 28, directory holders of the design indicated in *Figures* 27, 31, and 40 are a great convenience to the public and minimize theft or mutilation of the directories. The anodized aluminum directory racks illustrated are primarily designed for large and medium-size directories or a number of smaller directories which may be placed together in one binder. They are installed in combination with a shelf made of porcelain enamel steel. The rack is of the double directory arrangement which may be converted to a single directory type by covering one opening with a plate. If the directory rack is not desired, a continuous type shelf may be utilized in place of the combination shelf and rack.

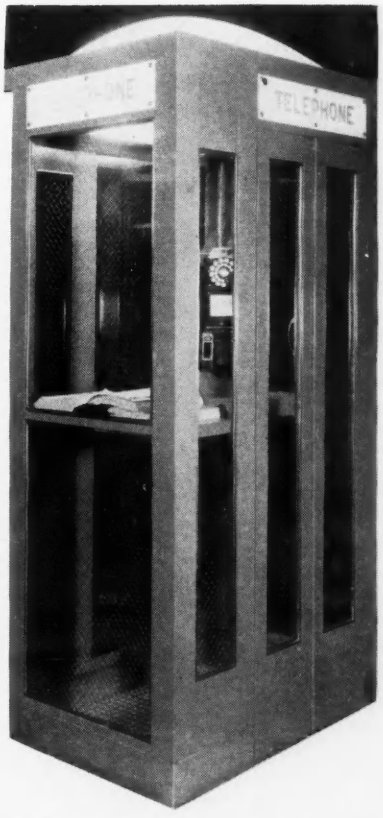


FIG. 39:—Showing directory shelf arrangement in a Sherron Metallic Corporation Model 40, Type 7 Outdoor Telephone Booth.

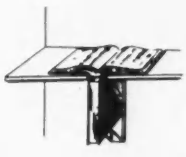


FIG. 40:—Tip-in directory rack with directory spread out flat for reference. (Courtesy of Reynolds Metals Co.)

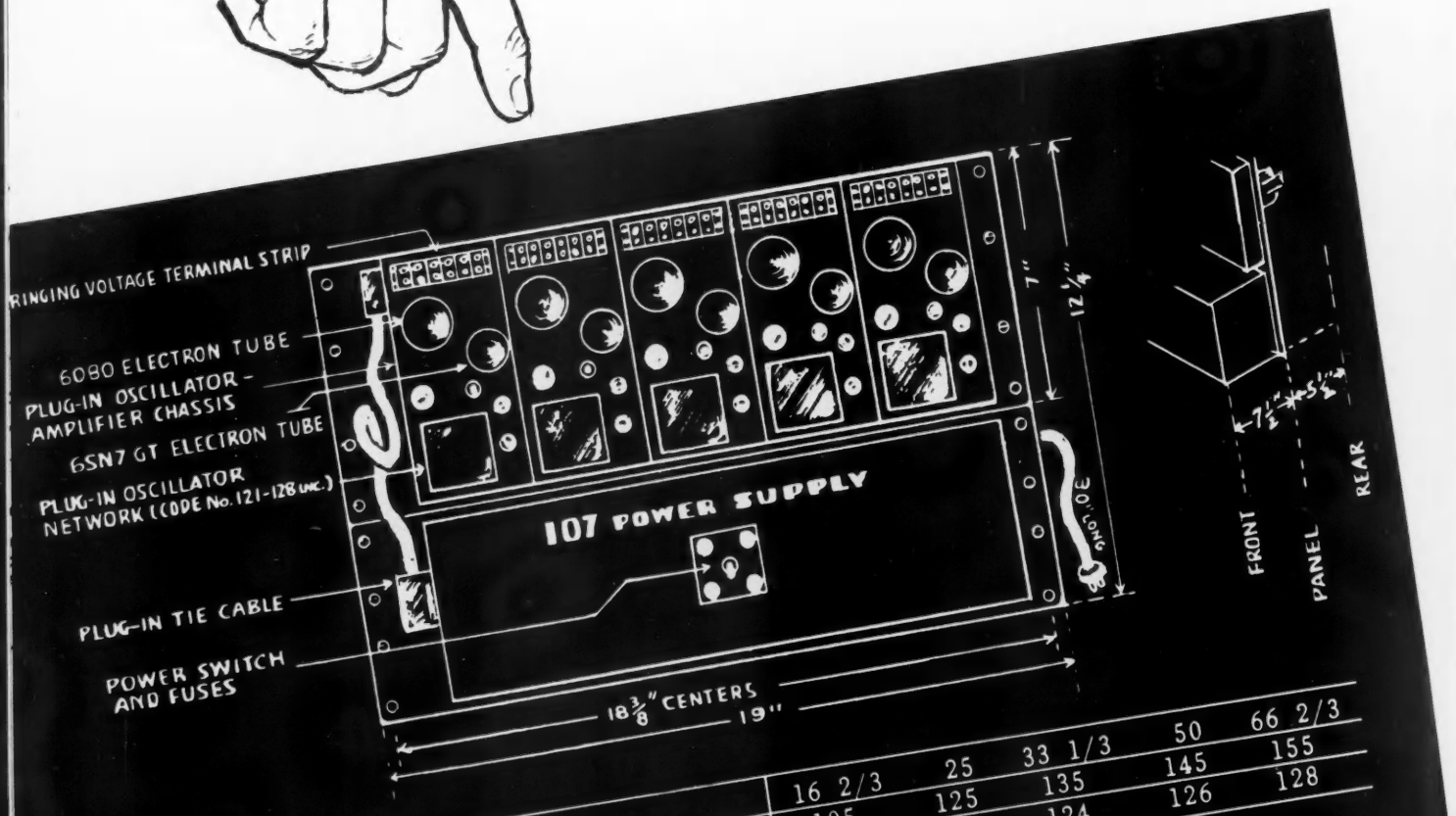
The directory binders hang from a hinge on the back. The paystation user has only to tip up the directory binder and spread it open on the shelf. The directory stays open until it is closed and it then drops back inside the rack of its own weight. The fact that the directory can be so easily opened for reference and then dropped back into the rack reduces the chance of tearing the pages and minimizes "doodling" or wanton marking of the directory.

Half Length Outdoor Telephone Booths

THE OUTDOOR telephone booths described thus far are of the full length type where the patron stands

FIG. 41:—The Suttle Handi-Booth is an inexpensive booth of new design for easy installation on wall or post and features safety glass and aluminum construction.

Modernizing? Cutting maintenance costs? Then . . .



Code No. 101 Harmonic	Frequency	16 2/3	25	33 1/3	50	66 2/3
	*Nom. Ring. Volt.	105	125	135	145	155
	Osc. Net. No.	121	123	124	126	128
Code No. 102 Synchromonic	Frequency	16	30	42	54	66
	*Nom. Ring. Volt.	105	125	135	145	155
	Osc. Net. No.	121	124	125	126	128
Code No. 103 Decimonic	Frequency	20	30	40	50	60
	*Nom. Ring. Volt.	105	125	135	145	155
	Osc. Net No.	122	124	125	126	127
Code No. 104 Special	Frequency	20	30	42	54	66
	*Nom. Ring. Volt.	105	125	135	145	155
	Osc. Net. No.	122	124	125	126	128

*Voltages adjustable from values indicated.

Any combination of five ringing frequencies available on special order.

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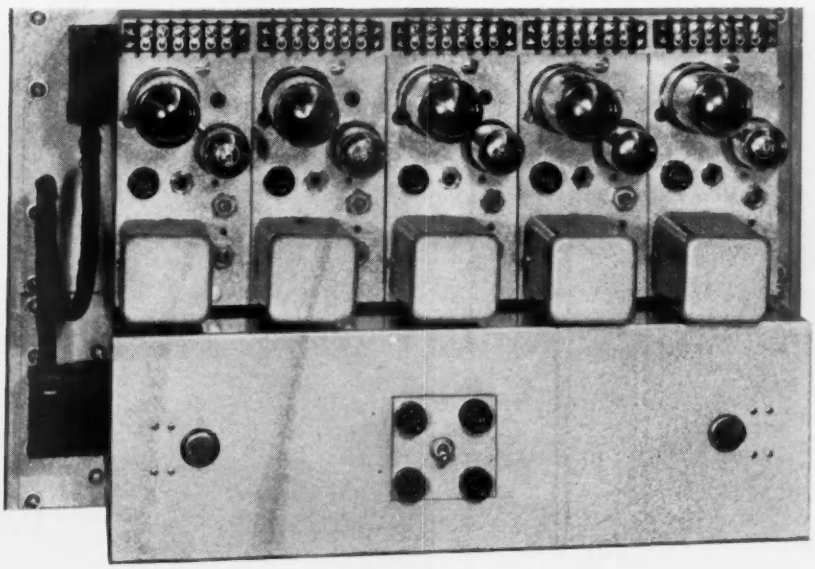
KELLOGG ELECTRONIC RINGING GENERATOR



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- **NO CROSS-RING PROBLEMS**...Extreme frequency stability . . . precise, easily adjustable frequencies.
- **FLEXIBILITY**...Provides any combination of 5 or fewer ringing frequencies. All ringing frequencies are independent of each other and/or frequency of power source.
- **EFFICIENT** . . . All frequencies continuously available . . . furnishes enough power for 1000 or more lines.
- **COMPACT** . . . Mounts on standard 19" relay rack...requires only 12¼" of vertical space.

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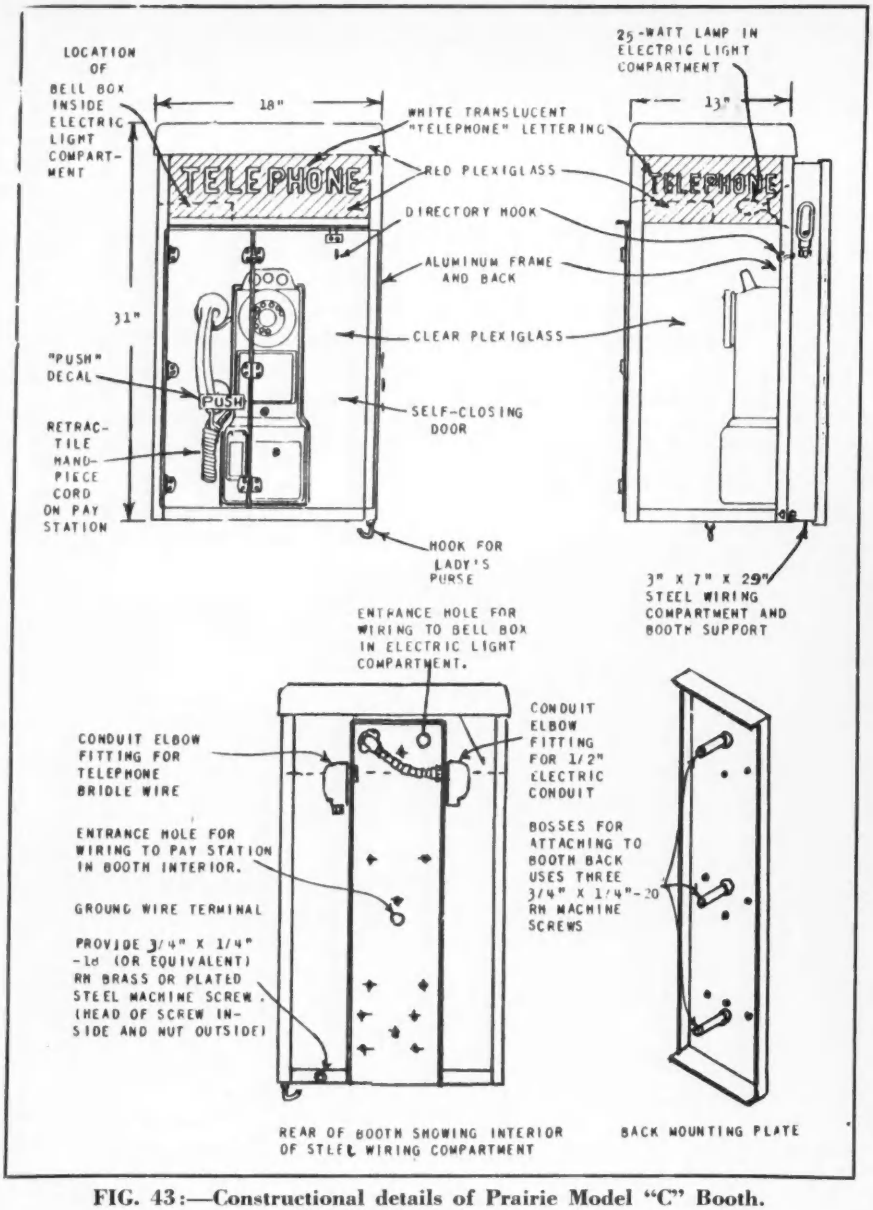

LOCATION OF BELL BOX INSIDE ELECTRIC LIGHT COMPARTMENT
18"
25-WATT LAMP IN ELECTRIC LIGHT COMPARTMENT
13"
WHITE TRANSLUCENT "TELEPHONE" LETTERING
RED PLEXIGLASS
TELEPHONE
DIRECTORY HOOK
ALUMINUM FRAME AND BACK
31"
CLEAR PLEXIGLASS
"PUSH" DECAL
PUSH
SELF-CLOSING DOOR
RETRACTILE HANDPIECE CORD ON PAY STATION
HOOK FOR LADY'S PURSE
3" X 7" X 29" STEEL WIRING COMPARTMENT AND BOOTH SUPPORT
ENTRANCE HOLE FOR WIRING TO BELL BOX IN ELECTRIC LIGHT COMPARTMENT.
CONDUIT ELBOW FITTING FOR TELEPHONE BRIDLE WIRE
CONDUIT ELBOW FITTING FOR 1/2" ELECTRIC CONDUIT
BOSSES FOR ATTACHING TO BOOTH BACK USES THREE 3/4" X 1/4"-20 RH MACHINE SCREWS
ENTRANCE HOLE FOR WIRING TO PAY STATION IN BOOTH INTERIOR.
GROUND WIRE TERMINAL
PROVIDE 3/4" X 1/4" -1d (OR EQUIVALENT) RH BRASS OR PLATED STEEL MACHINE SCREW. (HEAD OF SCREW INSIDE AND NUT OUTSIDE)
REAR OF BOOTH SHOWING INTERIOR OF STEEL WIRING COMPARTMENT
BACK MOUNTING PLATE

FIG. 43:—Constructional details of Prairie Model "C" Booth.

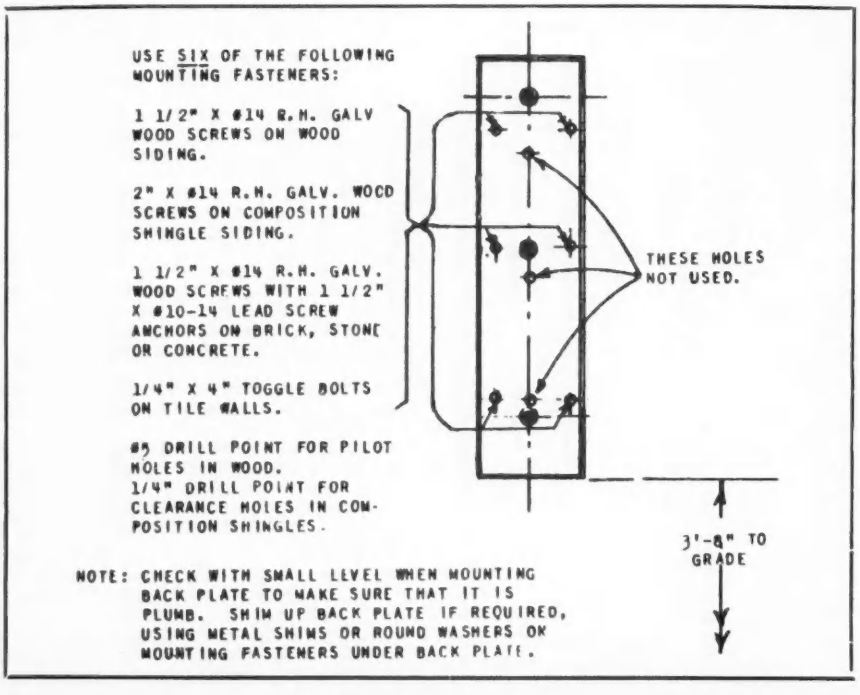

USE SIX OF THE FOLLOWING MOUNTING FASTENERS:
1 1/2" X #14 R.H. GALV WOOD SCREWS ON WOOD SIDING.
2" X #14 R.H. GALV. WOOD SCREWS ON COMPOSITION SHINGLE SIDING.
1 1/2" X #14 R.H. GALV. WOOD SCREWS WITH 1 1/2" X #10-14 LEAD SCREW ANCHORS ON BRICK, STONE OR CONCRETE.
1/4" X 4" TOGGLE BOLTS ON TILE WALLS.
#5 DRILL POINT FOR PILOT HOLES IN WOOD.
1/4" DRILL POINT FOR CLEARANCE HOLES IN COMPOSITION SHINGLES.
THESE HOLES NOT USED.
3'-8" TO GRADE
NOTE: CHECK WITH SMALL LEVEL WHEN MOUNTING BACK PLATE TO MAKE SURE THAT IT IS PLUMB. SHIM UP BACK PLATE IF REQUIRED, USING METAL SHIMS OR ROUND WASHERS ON MOUNTING FASTENERS UNDER BACK PLATE.

FIG. 44 (left):—Mounting fasteners for wall installation of Prairie Model "C" Booth.

in an enclosed space while using the pay telephone. A novel idea in which the pay station is enclosed in a small housing with self closing door was recently developed. The user stands outside while talking on the pay telephone.

The half-length outdoor booths illustrated in *Figures* 41 and 42 are primarily intended for locations of low paystation collections where a low-cost booth would be more likely to prove in from the standpoint of

FIG. 42:—The Prairie Model "C" outdoor booth is designed for installing on wall, post, or pedestal.

revenue in relation to investment cost. Such locations would be in small communities, particularly exchanges with unattended dial offices (CDO's).

This type of outdoor booth, however, can be profitably used in many locations. Suggested locations are real estate developments, drive-in establishments, filling stations, parking lots, and motels. This booth can be installed in construction areas to

provide temporary service. It is considered ideal for isolated locations as in city parks and sparsely settled areas. The booth can also be installed at curb locations or in driveways to provide drive-in telephone service.

The half-length booth is designed for wall, post, or pedestal mounting. The booth is located where it would be readily accessible to the public, and where the approach to the booth is free from hazards, such as service pits or lifts, and broken or uneven sidewalk. It is desirable to avoid locations where the paystation user would be subjected to hazards of passing or backing vehicles in the area or where the booth itself could be damaged by the vehicles.

Where the booth is installed to provide drive-in telephone service, location back of a curb will keep the vehicle from approaching too close to the booth with possible damage to the booth or vehicle.

Prairie Model "C" Outdoor Telephone Booth

THE PRAIRIE Model "C" booth is designed for wall or post mounting. It is constructed of heavy gauge aluminum with plexiglass sides, roof, and self-closing door. A steel compartment on the back provides space for the telephone and electric light wiring and furnishes a means for mounting the booth on a wall or steel post. The appearance of the Model "C" booth is indicated in *Figure* 43.

A 25-watt lamp inside the electric light compartment illuminates the red plexiglass roof and the "Telephone" lettering on the sides. At the same time, it provides light for the paystation user to use the telephone directory and dial his number. A yellow plexiglass ceiling inside the booth admits light to the booth interior and the resulting yellow glow minimizes attraction of night flying insects into the booth.

The booth is provided with a directory hook inside the booth, also a hook on the underside of the booth for a lady's purse.

For wall installations, the Model "C" booth is mounted as shown in *Figures* 44 and 45. If this location does not provide a stabilized gravel surface for the paystation user and a solid footing is needed, a 4″ x 30″ x 42″ concrete slab should be poured to provide the needed standing space.

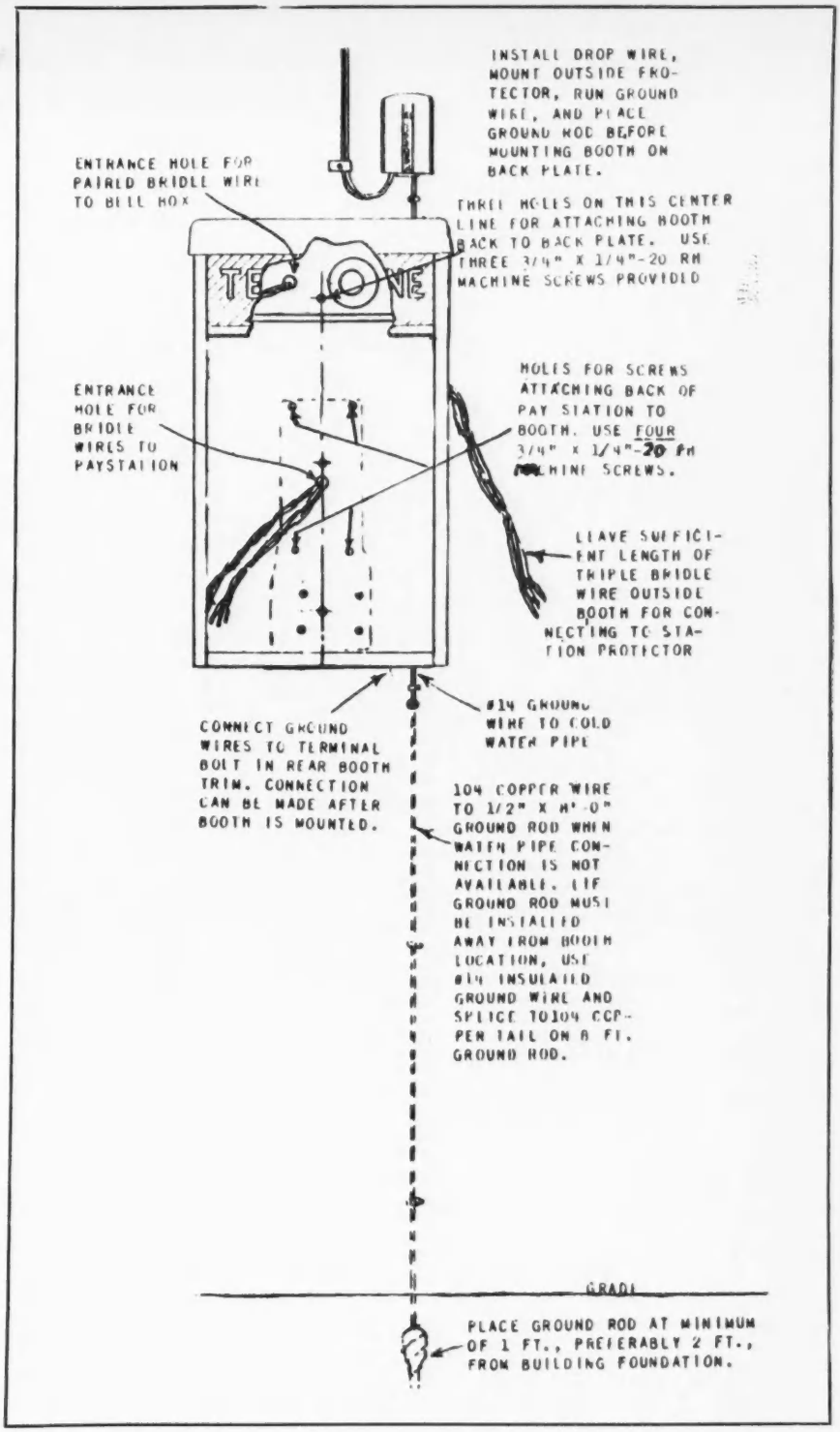

INSTALL DROP WIRE, MOUNT OUTSIDE PROTECTOR, RUN GROUND WIRE, AND PLACE GROUND ROD BEFORE MOUNTING BOOTH ON BACK PLATE.
ENTRANCE HOLE FOR PAIRED BRIDLE WIRE TO BELL BOX
THREE HOLES ON THIS CENTER LINE FOR ATTACHING BOOTH BACK TO BACK PLATE. USE THREE 3/4" X 1/4"-20 RH MACHINE SCREWS PROVIDED
TELEPHONE
HOLES FOR SCREWS ATTACHING BACK OF PAY STATION TO BOOTH. USE FOUR 3/4" X 1/4"-20 RH MACHINE SCREWS.
ENTRANCE HOLE FOR BRIDLE WIRES TO PAYSTATION
LEAVE SUFFICIENT LENGTH OF TRIPLE BRIDLE WIRE OUTSIDE BOOTH FOR CONNECTING TO STATION PROTECTOR
#14 GROUND WIRE TO COLD WATER PIPE
CONNECT GROUND WIRES TO TERMINAL BOLT IN REAR BOOTH TRIM. CONNECTION CAN BE MADE AFTER BOOTH IS MOUNTED.
104 COPPER WIRE TO 1/2" X 8'-0" GROUND ROD WHEN WATER PIPE CONNECTION IS NOT AVAILABLE. IF GROUND ROD MUST BE INSTALLED AWAY FROM BOOTH LOCATION, USE #14 INSULATED GROUND WIRE AND SPLICE TO104 COPPER TAIL ON 8 FT. GROUND ROD.
GRADE
PLACE GROUND ROD AT MINIMUM OF 1 FT., PREFERABLY 2 FT., FROM BUILDING FOUNDATION.

FIG. 45:—Mounting details for wall installation of Prairie Model "C" Booth.

The wiring of the electric light and placing of conduit and fittings is handled by an electrician on contract basis.

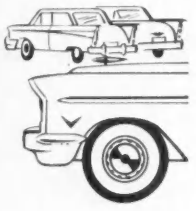
The conduit may be run from above or below the booth as required. The electrician can obtain access to the conduit elbow interior by removing the cover plate and slipping out the electric light wires to the light compartment. After the conduit is placed to the elbow fitting, the conduit wiring can be placed and spliced to the light wiring. The spliced wires can then be pushed back into the elbow fitting and the cover plate replaced. It will not be necessary to remove the booth from the wall for this work.

The post installation procedure is outlined in Figure 46 when it is desired to bring the electric light service and telephone circuits into the booth

Please turn to page 64

BEST...

FOR PARKING LOTS



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A TELEPHONE ENGINEER OPERATING MANUAL

Outdoor Booths

(Continued from page 63)

by overhead wire spans. A popular arrangement whereby both service leads and telephone wires are brought in through underground conduit and the booth is mounted on a pedestal is illustrated in *Figure* 47.

Suttle Model A-1 Handi-Booth

THE SUTTLE Equipment Company's Model A-1 Handi-Booth is illustrated in *Figures* 41 and 48 as a new design in an inexpensive outdoor booth which does not require an expensive installation.

The booth dimensions are 18 inches wide by 13 inches deep by 30 inches high. The booth is supplied with a 6½ foot concrete post for setting in a post hole filled with concrete as shown in *Figure* 48.

For pedestal mounting, this booth has a patented shatterproof safety glass and aluminum construction that is said to be waterproof. It can also be obtained with a solid aluminum back for wall mounting and solid aluminum panels are available to replace the clear glass panels.

The booth is equipped with a plastic top that can be lighted at night to attract potential paystation users and increase the night revenue. The wiring enters through the base.

A directory chain is provided for attaching the directory securely to an interior corner of the booth.

Maintenance

BECAUSE of their exposure to weather and traffic hazards and

Book Reviews

"1957 *Guide to Intensive Courses And Seminars For Executives.*" Published by the American Management Association 1515 Broadway, Times Square, Dept. TE&M. New York 36, N. Y. 59 pages. Price $.75.

Management education is a continuing process which cannot be accomplished by on-the-job training alone. Formal educational programs designed to acquaint top executives with recent developments and approaches in all areas of management are becoming increasingly essential.

Compiled by the Management Information Service of the American Management Association, this publication is an up-to-date guide to regular intensive courses and seminars offered to executives by schools, colleges, universities, associations, and consultants throughout the country. In addition to a description of AMA's own educational program, which involves an extensive number of courses, conferences, seminars and clinics, the guide lists:

(1) Short-term courses for executive development. These are broad but integrated courses in every phase of the executive function: policy and decision making, organization procedures, over-all managerial controls, production, financial management, personal development, etc. Time and location of class meetings, as well as fees, enrollment requirements, and special features, are indicated.

(2) Seminars and courses on special subjects of interest to management personnel. Courses in such varied topics as human relations, industrial engineering, international management, operations research, quality control, and supervision are briefly described, and details for each course or program are again noted.

A concluding section lists universities sponsoring periodic conferences or evening classes in management education.

"Maybe money can't make you happy—but it can make you more comfortable when you're not!"

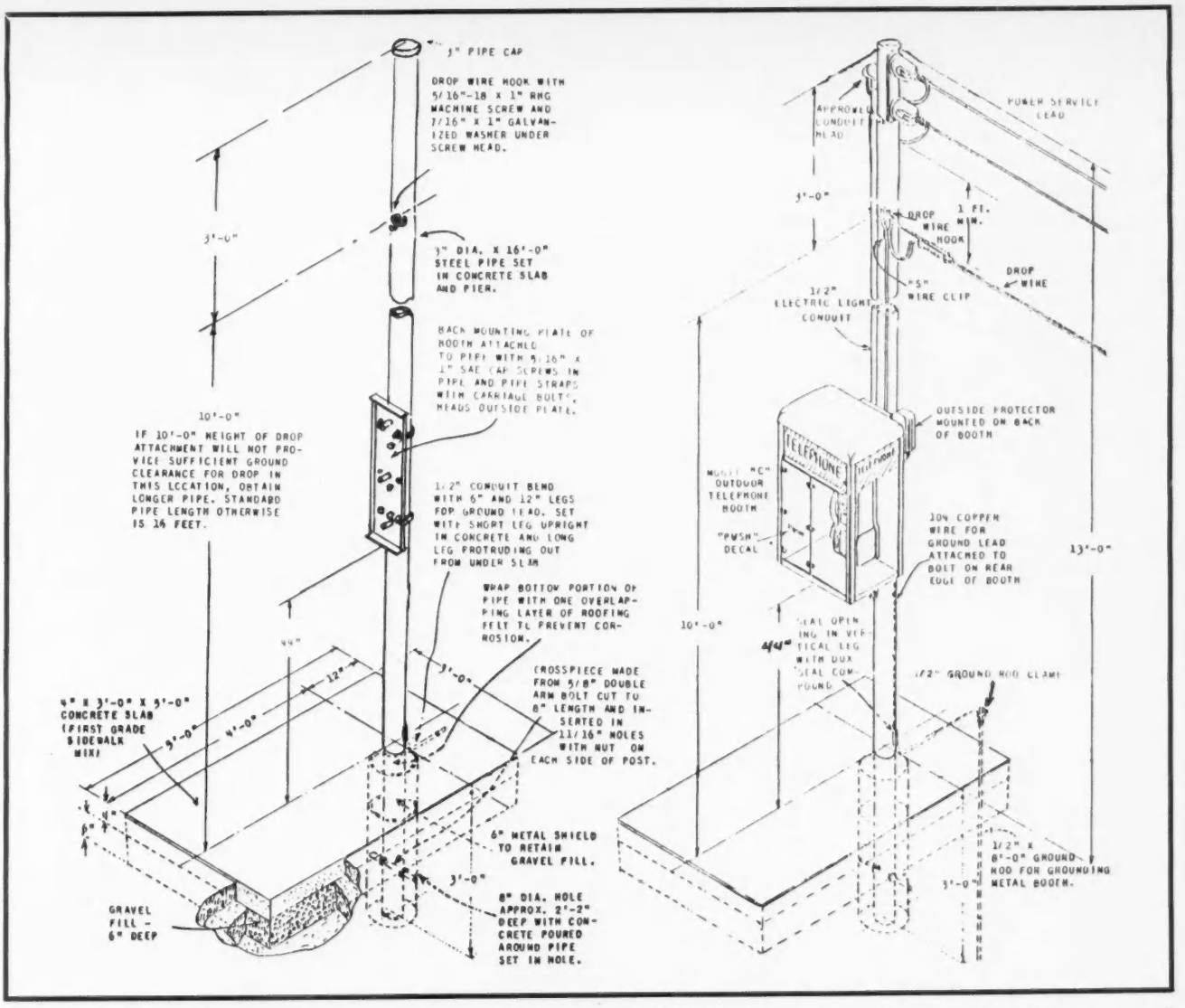
1" PIPE CAP
DROP WIRE HOOK WITH 5/16"-18 x 1" RHG MACHINE SCREW AND 7/16" x 1" GALVANIZED WASHER UNDER SCREW HEAD.
3'-0"
3" DIA. x 16'-0" STEEL PIPE SET IN CONCRETE SLAB AND PIER.
BACK MOUNTING PLATE OF BOOTH ATTACHED TO PIPE WITH 5/16" x 1" SAE CAP SCREWS IN PIPE AND PIPE STRAPS WITH CARRIAGE BOLTS, HEADS OUTSIDE PLATE.
10'-0"
IF 10'-0" HEIGHT OF DROP ATTACHMENT WILL NOT PROVIDE SUFFICIENT GROUND CLEARANCE FOR DROP IN THIS LOCATION, OBTAIN LONGER PIPE. STANDARD PIPE LENGTH OTHERWISE IS 16 FEET.
1/2" CONDUIT BEND WITH 6" AND 12" LEGS FOR GROUND LEAD. SET WITH SHORT LEG UPRIGHT IN CONCRETE AND LONG LEG PROTRUDING OUT FROM UNDER SLAB
WRAP BOTTOM PORTION OF PIPE WITH ONE OVERLAPPING LAYER OF ROOFING FELT TO PREVENT CORROSION.
CROSSPIECE MADE FROM 5/8" DOUBLE ARM BOLT CUT TO 8" LENGTH AND INSERTED IN 11/16" HOLES WITH NUT ON EACH SIDE OF POST.
4" x 3'-0" x 5'-0" CONCRETE SLAB (FIRST GRADE SIDEWALK MIX)
6" METAL SHIELD TO RETAIN GRAVEL FILL.
GRAVEL FILL - 6" DEEP
8" DIA. HOLE APPROX. 2'-2" DEEP WITH CONCRETE POURED AROUND PIPE SET IN HOLE.
APPROVED CONDUIT HEAD
POWER SERVICE LEAD
3'-0"
1 FT. MIN.
DROP WIRE HOOK
DROP WIRE
"S" WIRE CLIP
1/2" ELECTRIC LIGHT CONDUIT
OUTSIDE PROTECTOR MOUNTED ON BACK OF BOOTH
MODEL "C" OUTDOOR TELEPHONE BOOTH
TELEPHONE
"PUSH" DECAL
10¢ COPPER WIRE FOR GROUND LEAD ATTACHED TO BOLT ON REAR EDGE OF BOOTH
13'-0"
10'-0"
SEAL OPENING IN VERTICAL LEG WITH DUX SEAL COMPOUND
1/2" GROUND ROD CLAMP
1/2" x 8'-0" GROUND ROD FOR GROUNDING METAL BOOTH.
3'-0"

FIG. 46:—Mounting details for post installation of Prairie Model "C" Booth. Left — Concrete slab dimensions and mounting plate attachment to post. Right — Booth installation and outside wiring details.

frequent use by the public, the booths will require regular maintenance, consisting principally of cleaning.

The following work is recommended to be done at regular intervals as determined by local requirements.

(a) Clean booth glass inside and out. Replace Broken glass panels.

(b) Clean telephone.

(c) Clean directory and wiring shelf.

(d) Disinfect transmitter and receiver.

(e) Replace torn, dirty, or missing directory.

(f) Replace instruction card, if dirty and defaced or mutilated; also glass cover, if broken.

(g) Check operation of booth light and electric signs.

(h) Check for worn handpiece cord.

(i) Clean floor.

(j) Once each year, apply a coat-

FIG. 47:—Prairie Model "C" Booth on pedestal with electric light and telephone conduit run underground. Note lady's purse hanging on hook on underside of booth.

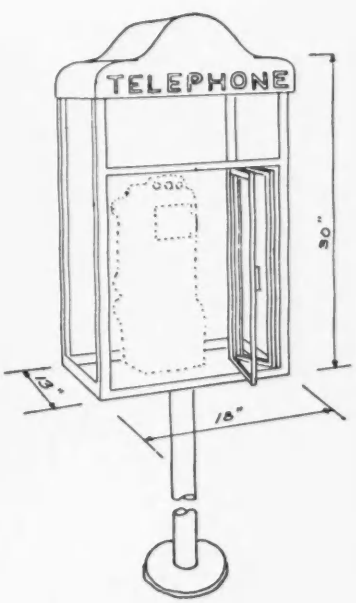

FIG. 48:—Dimensions and post mounting arrangement for Suttle Handi-Booth.

ing of best grade water wax to enameled surfaces inside and out.

The man assigned to this work should be furnished with a kit containing cleaning and disinfecting materials and directories. Unless this man is a combinationman qualified to take care of instrument and drop troubles, he should be required to report any unsatisfactory pay station and drop conditions to the testboard or his immediate supervisor for correction—THE END. (*A new operating manual will start in the next issue.*)

"Locating Management Potential"

General of Calif. Starts Recruiting Men For New "Management Trainee" Program

FINDING THE right niche for young employes (not over 35) with talent and managerial potential is the aim of the General Telephone Company of California these days, and the company has launched an "all out" campaign to recruit men from within the company as well as outstanding graduates from leading colleges who show promise for placement in the Management Trainee Program.

Employes selected for the program are called staff assistants during their course of training which lasts for 18 months. During that time they receive actual on-the-job experience in the company's division operating departments as well as the main general office departments in Santa Monica. In this way they receive a practical telephone education in each major field of activity as well as a broad viewpoint of operations, an important requirement in managerial training.

During the initial phase of the program, the staff assistants receive their field training in the company's western division, which includes Lancaster, Redondo Beach, Santa Monica and West Los Angeles. There, they must satisfactorily complete three months in the plant department, three months in engineering, six weeks in equipment and four months in the commercial department.

The final phase of the program is administered in the company's general office located at 2020 Santa Monica Boulevard in Santa Monica, consisting of six weeks in each of the traffic, plant, engineering and commercial departments. Upon successful completion of the program, the staff assistants are assigned to regular management positions alongside other members of the management team.

Because of the unusual demands placed upon the staff assistant, qualifications for selection are quite high. Those candidates under consideration meet the following requirements:

(1) A transcript of academic work completed shall be submitted by college graduates, and for non-college graduates performance on the job reflecting high quantity and quality of work shall be expected.

(2) The candidate would be observed during his visit to the Company for attitudes and personal-social characteristics that would lend themselves to sound management behavior.

(3) Projective tests, and extremely comprehensive interviewing will be administered to each candidate, to insure that he possesses marked managerial potential and is of high caliber. Only those of this nature will be referred for selection.

(4) After thorough screening by the General Office Industrial Relations Department, final selection of trainees will be made by a representative of the operating departments as designated by the Operating Vice President, or the appropriate Staff department head, and a representative of the General Office Industrial Relations Department.

(5) The management trainee review committee, comprised of operating department heads and the industrial relations director, will be responsible for the periodic review, training disposition and final disposition of each trainee. This committee is to be augmented by the appropriate staff department head when necessary. The committee will meet at regularly scheduled quarterly meetings. If a trainee is adjudged to be unsuccessful in the program, he may be asked to resign from the company with the assurance of an appropriate recommendation to future employers.

THE GENERAL TELEPHONE COMPANY MANAGEMENT TRAINEE PROGRAM trains the staff assistants thoroughly. Here AMY LAURITSON (left), chief operator in General's West Los Angeles traffic department shows DONALD WOODS how to complete a long distance telephone call at the switchboard. Mr. Woods started with the company 15 months ago and during his 18-month training period will have been assigned training in the plant, engineering, commercial and public relations departments. The work assignments will be characterized by such functions as are normally performed by an assignment clerk, facilityman, switchman, installer and PBX man in plant; engineering fieldman, engineering assistant and commercial representative.

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TELEPHONE ENGINEER & MANAGEMENT'S

HANDBOOK DATA SHEETS

Prepared By
JOHN S. REED

Reliable Reducing Squeez Sleeves (Con't.)

Kind of Conductors To Be Spliced	Code No.	Conductor Gauge	Conductor Mils	Die Groove	Number of Compressions On Each End
	10x12-C-1	10 to 12	102 to 081	C	3
Copperweld	10x12-D-1	10 to 12	102 to 081	D	3
Line Wire to	10x12- J-1	10 to 12	102 to 081	J	4
Copperweld	9x10- J-1	9 to 10	114 to 102	J	4
Line Wire	8x10- J-1	8 to 10	128 to 102	J	4
	9x 9- J-1	8 to 9	128 to 114	J	4
	12x14-C-4	12 to 14	109 to 083	C	3
	12x14-D-2	12 to 14	109 to 083	D	3
Steel Line	10x14- J-2	10 to 14	134 to 083	J	4
Wire to	10x12- J-2	10 to 12	134 to 109	J	4
Steel Line	9x12- J-2	9 to 12	148 to 109	J	4
Wire	9x10- J-2	9 to 10	148 to 134	J	4
	8x10- J-2	8 to 10	165 to 109	J	4
	8x 9- J-2	8 to 9	165 to 148	J	4
	14x17-18-C-21	14 to 17-18	083 to 045—040	C	3
	14x16-C-21	14 to 16	083 to 051	C	3
	12x19-22-C-41	12 to 19-22	109 to 036—025	C	3
	12x17-18-C-41	12 to 17-18	109 to 045—040	C	3
	12x17-18-D-21	12 to 17-18	109 to 045—040	D	3
Steel	12x16-C-41	12 to 16	109 to 051	C	3
Line Wire	12x16-D-21	12 to 16	109 to 051	D	3
to Drop or	12x14-C-41	12 to 14	109 to 064	C	3
Bridle Wire	12x14-D-21	12 to 14	109 to 064	D	3
(Bronze	10x17x18-J-21	10 to 17-18	134 to 045—040	J	4
or Copper-	10x16- J-21	10 to 16	134 to 051	J	4
weld)	10x14- J-21	10 to 14	134 to 064	J	4
	9x17-18- J-21	9 to 17-18	148 to 045—040	J	4
	9x16- J-21	9 to 16	148 to 051	J	4
	9x14- J-21	9 to 14	148 to 064	J	4
	8x16- J-21	8 to 16	165 to 051	J	4
	8x14- J-21	8 to 14	165 to 064	J	4

ACME VISIBLE

FLEXOLINE

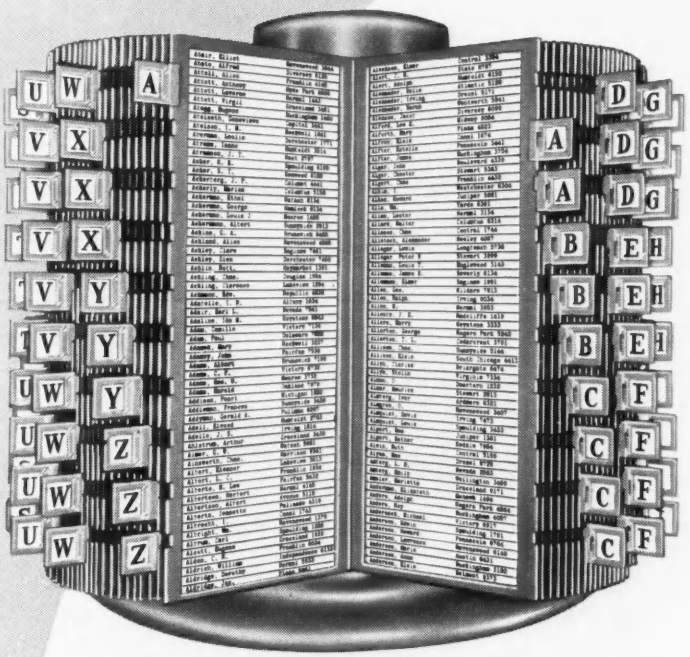
equipment for

INFORMATION RECORDS

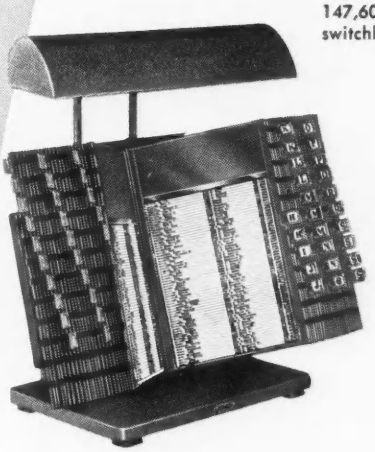
Speed up your central information switchboard records by making *all* of your telephone listings conveniently available to every information operator.

Through the use of Acme FLEXOLINE Equipment, telephone companies have been able to render an improved service at lower cost, speed up service and cut many corners in operation. The ease with which new names or listings are inserted in their correct places helps to keep lists always up to date, in many cases within a few minutes after the change has been completed.

Regardless of the type of switchboard you use or the number of subscribers you have, there is an Acme Time-Saving FLEXOLINE modern, hi-speed reference unit that will exactly meet your individual purpose.



Revolving stands provide compactness and great capacity . . . in single or double tier units they hold from 7,000 to 147,600 listings. May be used on desk, switchboard or mounted on pedestals.



Desk stands, individual units with up to 32,800 listings capacity or in banks of a number of stands, for greater capacity.

Insite Index for small information lists or any other list where speed and accuracy are essential. Used on key shelf or desk. In a wide range of sizes and capacities from 350 to 2,500 listings.

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☐ Have representative call. Date_____ Time_____

☐ We are interested in Acme Visible equipment for_____ records.
KIND OF RECORD

COMPANY_____ ATTENTION_____

ADDRESS_____

CITY_____ ZONE_____ STATE_____

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Your Automatic Electric Supply Warehouse Manager takes a personal interest in your problems.

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He's done it all—time and time again. And it's little "extras" like this that cause so many telephone companies to use Automatic's Supply Service.

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A MEMBER OF THE GENERAL TELEPHONE SYSTEM

ONE OF AMERICA'S GREAT COMMUNICATIONS SYSTEMS

Coachella Valley Tel. Co. Builds New Telephone Center

USING AN air hammer instead of the conventional shovel for the traditional ground-breaking ceremonies, J. W. Newman, president, Coachella Valley Telephone Co. recently inaugurated an accelerated expansion program that includes construction of a new $400,000 telephone center at Indio, California.

A new and enlarged $50,000 telephone building of modern design, comprising 5500 square feet, is being erected to house direct distance dialing facilities, inward intertoll dialing, expanded central office equipment and a new 8-position toll board.

When the total $400,000 project, buildings and equipment installation is completed late in 1957, all telephone subscribers will be able to dial station-to-station long distance calls direct. The only assistance from an operator will be to record the calling party's number. Calls will be recorded, timed and priced automatically.

Over-all supervision of the project is under the direction of J. C. Newman, manager son of President Newman. "We have planned and engineered this program in such a way," he said, "that all switches and equipment previously in use, and now being replaced by new equipment, will be placed in service in other offices. Nothing previously purchased will become obsolete or scrapped."

Indio, the date capitol of the United States, is located in the heart of the rolling desert of southern California. The company serves the agricultural lands and resorts of the fertile Coachella Valley, with some 7500 subscribers and exchanges at Indio, Coachella, Thermal, Palm Desert, Mecca, Oasis and Thousand Palms.

A wide variety of crops is produced on the Valley's irrigated lands, but grapes and dates accounted for about two-fifths of the area's crop evaluation of more than $25,000,000 in 1955.

General of Southwest Reports Merger Completion

WALTER G. WRIGHT, president of the General Telephone Co. of the Southwest, San Angelo, Texas, has announced that the Texas Telephone Co., Sherman, and the Oklahoma Telephone Co., Broken Arrow, Okla., officially merged with the General Telephone Co. of the Southwest, effective April 1.

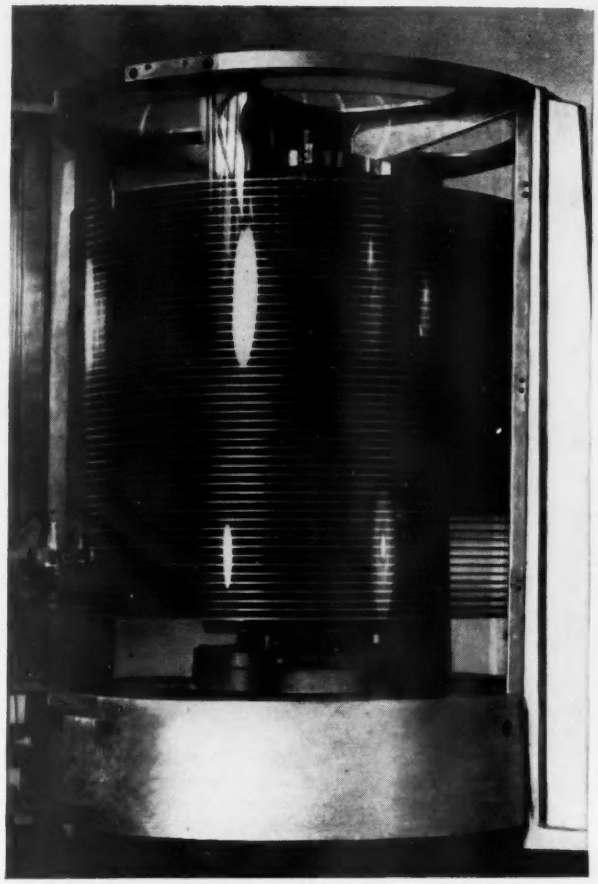
J. C. NEWMAN, manager, Coachella Valley Telephone Co. looks on with J. A. RECTOR of Automatic Electric Sales Corp., as J. W. NEWMAN, president of the telephone company, uses an air hammer to break ground for a $400,000 telephone center at Indio, Calif. The new exchange building and installation of direct distance dialing facilities, inward intertoll dialing, expanded central office equipment and new 8 position toll board, are scheduled for completion late this year.

The Texas and Oklahoma Companies were acquired by the General Telephone System when it merged with the Gary Telephone System in October, 1955, and have been operating under the General System since then. Wright added that as a result of this merger, the number of exchanges served by the company will be 264; the number of telephones will be increased to 243,000 from 198,000; assets will increase to $72,000,000 from $56,000,000; and the number of employes will increase to 3,500 from 2,900.

The General Telephone Co. of the Southwest sold to institutional investors $9,000,000 of 4¾% first mortgage bonds and to the General Telephone Corp. $2,850,000 in common stock. The company traded $3,650,000 of its common stock for a like amount of Texas Telephone and Oklahoma Telephone common stock held by General Telephone Corp. Texas Telephone bonds totaling $2,510,000 were exchanged for General Telephone Co. of the Southwest bonds. Debentures and preferred stock of Texas Telephone and bonds of Oklahoma Telephone were called for redemption.

Bell Laboratories Names Doherty, Assistant to Pres.

WILLIAM H. DOHERTY has been named assistant to president of Bell



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IBM® 305 RAMAC®

the all-purpose, electronic accounting system—in one unit!

...provides "single step" data processing for today's Communications companies!

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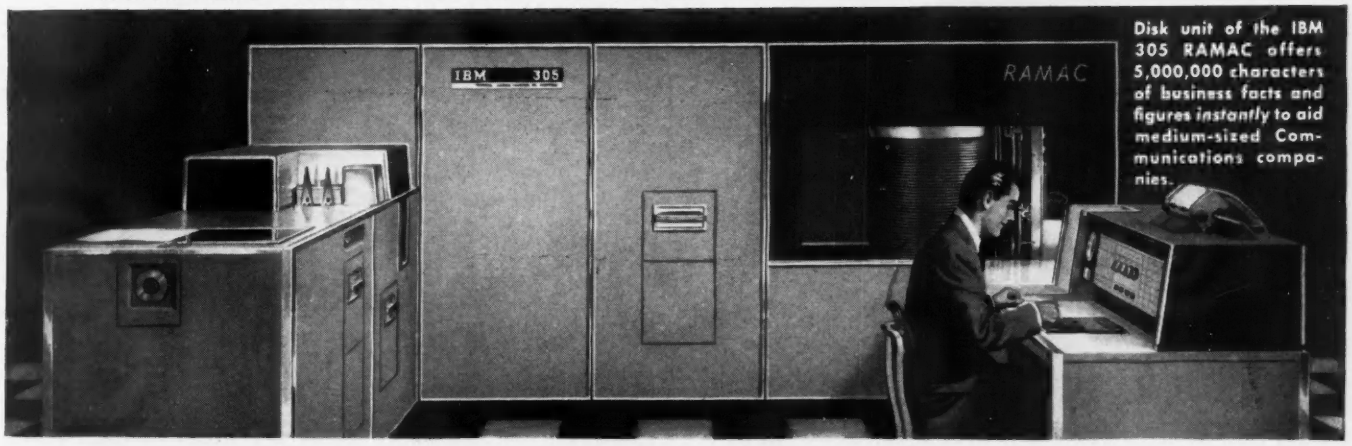


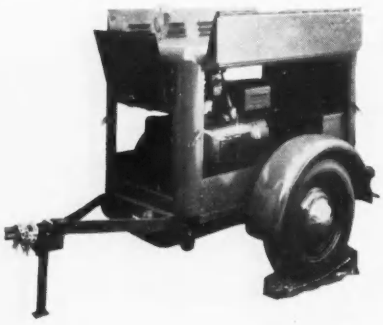
Disk unit of the IBM 305 RAMAC offers 5,000,000 characters of business facts and figures *instantly* to aid medium-sized Communications companies.

Kellogg Line Supplies Parade

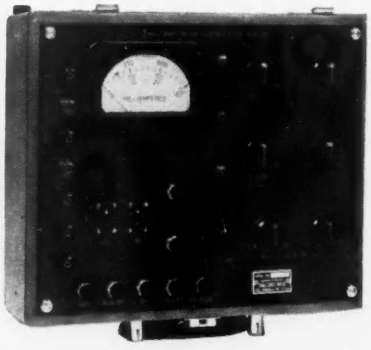
Kellogg has been offering the best in line supplies for longer than an elephant can remember. These supplies are delivered promptly, too. Kellogg's strategically located warehouses and distribution points assure you quick delivery.

More Holding Power—Less Load per Blade!—The Chance 8-Way Anchor distributes the load all the way around the hole. Expands to form a complete pyramid shaped square. Made in sizes from 60 to 200 square inches in area. Made by A. B. CHANCE COMPANY.

The Time-Tested Steel Strand. A ductile, adherent zinc coating, applied by the famous Crapo Galvanizing Process, provides lasting protection against corrosion in INDIANA STEEL & WIRE COMPANY'S Crapo Steel Strand. Minimum maintenance expense.



Maintenance Generator—Equipment includes toolbox, fuel tank, safety chain and chocks, taillight and reflectors, and sheet-metal house with hinged sides, hinged front cover. Available with or without generator —92" long, 53" wide, 51" high. With generator, weighs 800 lbs. S & G MANUFACTURING CORPORATION.



Shallcross No. 696 Test Set completely self-contained, portable, five separate circuits for testing relays and similar electromagnetic devices of telephone and telegraph equipment. Five independent and separate test conditions may be set up at the same time.

SHALLCROSS MFG. COMPANY.

New 48-Volt Battery Charger Line. Completely redesigned Raytheon Recti-Chargers (R) feature no load to full load regulation of ±1%, no tubes, automatic compensation for rectifier aging, no audible hum. Most compact units on the market—single and three phase, output from 30 to 400 amperes. RAYTHEON MANUFACTURING COMPANY.

Fuseless Protector with weathertight neoprene cover. Equipped with Reliable No. 504 Protector Units for station protection and Reliable No. 506 Protector Units for cable protection. Listed under UL re-examination service. Easy to install—simple to maintain—extra-long life. Made by RELIABLE ELECTRIC COMPANY.

Extra-Long Life!—The suspended and supported plate construction is an exclusive feature of C&D BATTERIES. Choose C&D PlastiCal (lead-calcium grid) for life expectancy of 25 years . . . for 14 years expectancy, specify PlastiCell (high tensile lead alloy grids). Made by C&D BATTERIES, INC

NT30 Neale Terminal designed for easy installation by regular maintenance man. No splicing or wire cutting necessary. No joints to wipe or seams to float. Same terminal may be used over and over again. Vulcanized rubber seals cable sheath and terminal shell. CABLE SPINNING EQUIPMENT COMPANY.

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Mansfield 7-2816

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Telephone Laboratories. He has been assistant vice president, merchandising, of the American Telephone & Telegraph Co. since August, 1955. Before that he was director of research in electrical communications at the Bell Laboratories, where he began his telephone career in 1929.

A native of Cambridge, Mass., Mr. Doherty received the B. S. degree in electric communication engineering

WM. H. DOHERTY

from Harvard University in 1927, and the M. S. degree in engineering the following year, also from Harvard.

His early work at Bell Laboratories was in high-power transmitter development for transoceanic telephone service and broadcasting. This work led to the invention of a high-efficiency power amplifier now extensively used in broadcasting, for which the Institute of Radio Engineers awarded him the Morris Liebmann Memorial Prize in 1937.

Later he participated in pioneering work in the fire-control radar field, and throughout World War II supervised a development group which was responsible for the design of a number of radars widely used on naval surface ships and submarines for gunfire and torpedo control.

He continued in military electronics work until 1949, when he became Director of Electronic and Television Research. He was appointed Director of Research in Electrical Communications in 1951 and continued in that post until he went to the A. T. & T. Co. in 1955.

Mr. Doherty is a Fellow of the Institute of Radio Engineers and a former member of its board of directors. He holds an honorary Doctor of Science Degree from the Catholic University of America.

"Snake Alive" — In A Coin Box!

LIBERATED GOPHER SNAKE leaves nest among nickels in public telephone pay booth at service station, 12000 Culver Boulevard, Mar Vista, Calif. after General Telephone Co. of California repairman, *Dale Schreiner*, took coin box apart. Snake is pet of *Louis Gallegas* of Mar Vista, who said he put him on ledge of booth for moment while he turned around to talk with friend. Snake disappeared. Patron complained to station owner *Ralph Sorenson* that he had snakes in coin box; Sorenson said patron must have bats in belfry. Now he knows customer is always right. — (*Evening Outlook photo.*)

B. C. Tel. and Pacific Bell Announce Microwave Project

DETAILS OF a new long distance telephone network between Seattle and Vancouver, British Columbia, were announced last month by Pacific Telephone & Telegraph Co., and B. C. Telephone Co. The system, to cost an estimated $1,560,000, will use high frequency microwave radio to transmit long distance calls.

The system is a joint undertaking between the two companies. Long distance calls will leap-frog from mountain top to mountain top in six major jumps from Vancouver to Seattle. Steel towers with huge antennas will be located at Rattlesnake Ledge near North Bend, Bald Hill near Everett, Devils Mountain near Mt. Vernon, Lookout Mountain at Bellingham and at Thorne Hill, near Haney. At Haney, the north-south system will tie into the new trans-Canada microwave network now under construction.

W. S. Pipes, vice-president and general manager of B. C. Telephone, and Ben Bowling, vice-president and general manager of Pacific Telephone's Washington-Idaho area, said the system is expected to be in operation by June of 1958. Final engineering work is still in progress for the Washington portion of the system.

Work has already begun on the terminal equipment in Vancouver on top of the British Columbia Telephone Company's main downtown building. Work is also in progress at the Haney junction point.

Construction of buildings and towers at the Devils Mountain and Lookout Mountain sites is expected to begin this summer. Existing towers at Rattlesnake Ledge and Bald Hill, con-

structed as a part of the Port Angeles-Seattle microwave system, will be utilized for the Seattle-Vancouver route. also. Messages traveling over the route will go an estimated 175 miles.

The system will contain two channels, one for regular operation and the other a standby or protection channel. Each channel will carry 120 simultaneous conversations or could serve as a television transmission channel.

Design of the system provides for automatic switching. If one channel fails the other would automatically go into operation.

Initially the new network will have no facilities for dropping traffic off at intermediate points such as Bellingham, but is designed so that if such service is needed, it can be established.

Bowling and Pipes said that early work on the project began in the summer of 1955, when a five-man crew

Alabama Commission OK's Pell City Rate Boost

THE Alabama Public Service Commission has authorized the Coosa Valley Telephone Co., Pell City, to raise rates.

The increases include $3.50 to $5 a month for private subscribers and $2.25 to $3.50 for party lines. The company asked the raises on the basis of recent improvements that included conversion to dial.

Top Plant Officials Named at Waynesboro, Va.

F. T. PRUFER, president and chairman of the board of the Clifton Forge-Waynesboro (Va.) Telephone Co., has announced that Deward C. Brackman, formerly commercial manager of the company's Covington exchange has been appointed commercial manager of the Waynesboro exchange, and Guy L. Sloope, plant superintendent at Waynesboro, has become plant manager of the Waynesboro exchange.

Since the death of Neal A. Hintze, former manager of the Waynesboro exchange, on February 28, Mr. Brackman has been acting commercial manager at Waynesboro. He was born in White Sulphur Springs, W. Va., and after graduation from high school there, he was employed by the Western Electric Co. in Washington, D. C. as an equipment installer.

He entered the Army in 1943 and

Here's the PITCH
for faster, more economical anchoring
CHANCE BLACKFOOT ANCHORS
Can be installed by machine to cut line construction costs
Here's a screw anchor that goes down fast and easy whether your line crews install it by hand or by machine. A king-size thimbleye on the Chance Blackfoot will accommodate a big turning bar for easy hand installation. And when you machine-install a Chance Blackfoot Anchor, you reduce installation time to a minimum—which means a big savings in time and money!
What about holding power? Dynamometer tests on a Chance 15 inch Blackfoot Screw Anchor showed no creep at 22,000 pounds!
PITCH CONTROLLED
This accurately pitched, fast cutting blade really goes down fast. Every size anchor is individually "pitch controlled."
SMALLER HUB
Smaller hubs on Chance Screw Anchors mean less friction—easier installation. Less earth is disturbed during installation. That's why the Blackfoot has greater holding power.
Man! that anchor comes down fast!
"ANCHORING" is the most complete guide to anchoring and guying ever developed. It shows how to choose the right anchor for every job—and how to install it right. Send for your copy!
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CENTRALIA, MISSOURI

Ground Breaking At Ludington, Mich.

RECENT GROUND-BREAKING ceremonies at Ludington, Mich., signaled the start of construction of a new $240,000 exchange building by General Telephone Co. of Michigan. Total cost of the project will be over $1,000,000 since Ludington will be the toll center for Hart, Shelby and Pentwater. Shown above are (l. to r.): Commissioners PETER COPOYAN, RAYMOND GILBERT, OWEN GAVIGAN, WM. GREENE, HAROLD BARNETT; Mayor DAN L. RATSACK; City Manager, JAMES CARTIER; Commissioners CARL GRUNDMARK, and FRED ADAMS.

was assigned to the Signal Corps and subsequently saw service in France, Belgium and Germany. Mr. Brackman and Miss Betty Warnick of Luke, Md., were married in June, 1950. They have one son, William Robert, 4.

Mr. Brackman was employed by the Clifton Forge-Waynesboro Telephone Co. in July, 1951, at the Covington exchange as a central office repairman. In May, 1956, he was promoted to commercial manager of the Covington exchange.

Mr. Sloope was born in Pennaman, Va., and attended high school in Ashland, Ky., graduating in 1937. He then entered Bliss Electrical School in Washington, D. C., graduating in 1938. He was first employed by the Clifton Forge-Waynesboro Co., in November, 1938 and except for five years' service with the Army Signal Corps, from May, 1941, to March, 1946, his employment with the company has been uninterrupted.

Mr. Prufer, also announced that Hunter H. Mays, formerly with the plant department of the company at the Cilfton Forge exchange, has been appointed commercial manager of the Covington exchange. Mr. May succeeds Mr. Brackman.

Mr. Mays was born in Lexington and graduated from high school there. From 1943 to 1946 he served 32 months with the Marine Corps and saw action in the South Pacific. He first entered the telephone business with the Lexington Telephone Co. He completed a special course at Illinois Technical Institute and subsequently was employed by General Motors at its experimental laboratory in La Grange, Ill.

He joined the Clifton Forge-Waynesboro Telephone Company at its Clifton Forge exchange in August, 1949, and advanced to central office repairman.

Commission Denies Mohawk Petition

Mohawk Request For Modification of Foreign Attachment Provision Denied

LAST MONTH the New York Public Service Commission denied petition of Mohawk Business Machines Corp., Brooklyn, N. Y. for an order directing New York Telephone Co. to modify the "foreign attachment" provision of its tariff. Mohawk had sought the change to permit use of Mohawk's message repeater and answering devices with New York Telephone Company's equipment.

Mohawk Business Machines manufactures two answering devices for attachment to telephones. One, the "Tele-Magnet," is an answering device which may be connected mechanically, inductively and acoustically to a telephone. Through a combination of mechanical and electric inductive equipment, it is designed to respond to calls to the telephone to which it is connected. It does this by lifting the instrument from its cradle and rotating it into a position so that

a pre-recorded message may be played back through a loud speaker located near the mouthpiece. Any message which the caller may then wish to leave may be picked up magnetically by an induction coil and, after amplification, be recorded on a wire recorder. As now designed, the "Tele-Magnet" is appropriate for use on only one older type of handset now in use.

The company also manufactures a "Message Repeater," a less complicated device which is connected directly by wires to telephone facilities. It is an "answering only" device which operates without physically removing the instrument from its cradle, repeating a pre-recorded message in answer to incoming calls.

In opposing Mohawk's request, New York Telephone alleged that the "Tele-Magnet" would interfere with, impair, retard and adversely affect service rendered by it. It argued also that it is under a public duty to render adequate and efficient service and that in order to do so and to assure satisfactory service it is essential that telephone equipment used by its subscribers must be exclusively controlled, operated and maintained by itself. New York Telephone has its own answering devices which are available to subscribers wishing such service and for which charges are now included in its filed tariff.

At public hearings on the case, equipment manufactured by Mohawk as well as that provided by New York Telephone was demonstrated. According to the New York Commission, tests made by the PSC staff indicated that "Tele-Magnet" equipment did not provide satisfactory service at all times and that when it failed to operate properly, a "tied-up" telephone line could result. Other inadequacies were also described.

In a report to the Commission, Examiner William T. Wilkinson stated that "the functioning or malfunctioning" of an answering device "has an important bearing and effect upon the proper and efficient operation of respondent's (New York Telephone) telephone system and upon the service rendered thereby to the consuming public. No physical impairment of the efficiency of telephone facilities may be countenanced, whether occasioned by the use of foreign attachments, contrivances or devices with malfunctioning propensities or otherwise. This record abundantly demonstrates (1) the physical impairment of the respondent's facilities which would be occasioned by the unrestricted use of the devices here involved, and (2) the deleterious effects thereof upon the telephone system and consequent impairment of the service rendered."

Taking note of a recent Federal Court decision in which Hush-A-Phone Corp. won authorization for subscribers' use of its mouthpiece attachments, Mr. Wilkinson says the Mohawk case "is unlike" the other because the U. S. Court found no basis for a conclusion of "system service impairment" through the use of the attachments then under consideration.

Basic to the Mohawk case, he comments "is the question of whether any such device which the respondent does not directly supervise and control — and bear responsibility for — should be authorized to be introduced into the operation of its telephone system."

In recommending dismissal of Mohawk's petition, he concludes that New York Telephone "would be open to the charge of having neglected" its public responsibilities if it "were to permit the uncontrolled and unsupervised use by its subscribers of devices such as are here involved — its own or others; perfect or imperfect."

New AFECA Member

W. C. HASSELHORN, president of Cook Electric Co., Chicago, and host for the March meeting of the Armed Forces Electronics & Communications Association, is shown receiving congratulations from R. K. FRIED, Chicago Chapter President, following the announcement of plans to join the organization as a company, as well as thrugh individual membership. A. J. SCHMITT, President of Amphenol, is shown on the left, and G. PAYNE, of the U. S. Department of Commerce, on the right.

Gulf States Drivers Receive, T.S.A. Safety Award

SIXTY REGULAR drivers of fleet units of the Gulf States Telephone Co., Tyler, Texas, during 1956 drove telephone company cars and trucks a total of 497,570 miles, with only one minor accident and without suffering any injury to the driver or passengers in the vehicles.

That record won the Texas Safety Association 1956 Industrial Fleet Safety Contest for The Gulf States company in group III which included communication fleets in long lines communications.

This is the fourth award for first place received by The Gulf States' drivers in four consecutive years. From 1953 through the year 1956 a total of 1,703,823 miles were driven with a total of 10 minor accidents and without any injury to the drivers or passengers.

For this commendable record each driver was presented with a wind master pocket lighter.

Presentation of the first place award was made at the 18th annual Texas Safety Conference held at Houston, Texas, on March 24-27.

NEW PRODUCTS

TE&M READERS liked the enlarged New Products' Department which appeared in the April 15th issue and our New Products' editor continues the pace in this issue with data on: (1) A new pipe bender; (2) a reel cart equipped with hydraulic jack (3) a new line of installation bodies for trucks; (4) an instrument for measuring distances from 8 ft. to 100 ft.; — and several other items of interest to industry members.

Power Bender

A NEW, lightweight, hydraulic bender that will make a full 90° bend in 4″ and smaller conduit and pipe with one ram stroke has been announced by Greenlee Tool Co.

According to reports of on-the-job tests made by contractors, the new lightweight No. 884 Power Bender eliminates costly time-consuming extra setups usually required when making 90° bends on pipe of this size.

It was possible through the use of high-strength aluminum alloy to make this 40-ton bender light enough for one man to carry the heaviest section with ease. Specially designed pipe supports serve as rollers when wheeling bender from one location to another. Due to its unique design this bender can be used in any position without loss of operating efficiency.

New quick-change, positive-locking pipe support pins were appreciated by the operators according to all job reports. Easy, fast removal of pipe supports mean quick insertion and removal of pipe from the front of bender with the frame always remaining in one piece.

Regularly operated with the No. 798AC-SA Power Pump, and connected by a quick-coupling high-pressure hose, the No. 884 will bend 4″ pipe 90° in 4 minutes. If higher bending speed is desired the Greenlee No. 797E-SA Power Pump will do the job in only 30 seconds. And other high pressure power pump of up to 10,000 psi can be used with this bender.

Complete details can be had in a new descriptive bulletin, Form E-224, by *Checking New Product* 144.

New Reel Cart

A NEW reel cart equipped with a hydraulic jack can be used for several purposes: (1) to transport reels of wire rope and electrical cable, (2) as a metering stand for paying out cable, (3) as a turntable for large coils or (4) to lift reels into and out of cable winding machines. The cart does the work. It is able to lift reels weighing up to 1,500 lb. The arms will accommodate reels up to 48 in. in diameter by 32 in. wide.

COLUMBIA reel cart with hydraulic jack lifts 1,500-lb. reels.

Cart is of sturdy welded steel construction with rubber-tired wheels. It is equipped with a foot brake, which locks against the front wheels. Shafts and bushings for the reels and a wire leveling roller are furnished as standard equipment. For complete data, *Check New Product* 145.

Installer Bodies

A NEW LINE of IU-76 telephone installer bodies is now available from J. H. Holan Corp.

The new line of bodies — designed for installers, repairmen, troublemen, and combinationmen — puts everything within easy reach and makes all tools accessible from the rear or curb side.

The back compartment includes three sliding materials drawers; a larger sliding drawer for inside wire and cords; a drop wire reel on a sliding shelf; a section for long tools that extends through the body; a sliding drawer for directories and backboards; and space for installer's bags, tree trimmer and other equipment. Porcelain or plastic tubes and long bits can be stored on the rear door.

The right side compartment has two sliding drawers — one for materials, one for outside wire, P wire guards and miscellaneous. There is

New hydraulic bender.

New body for installer's truck.

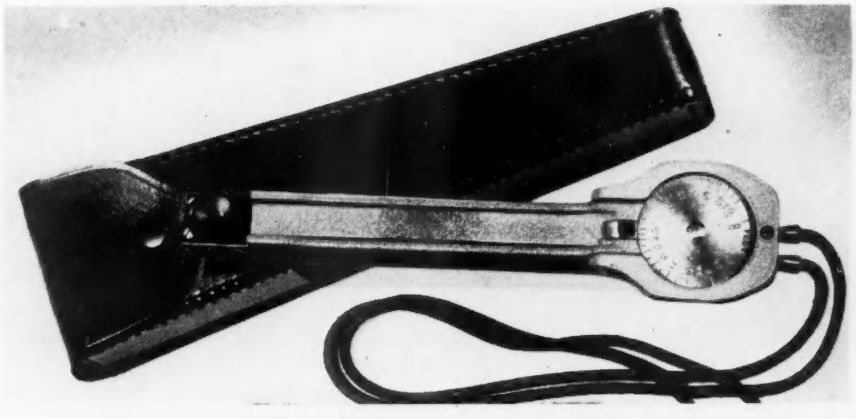
also room for saws, rubber goods, body belts and climbers. The left side compartment has a sliding shelf for the spare tire. Overhead brackets for various types of ladders are available.

For a loading diagram and further information, *Check New Product* 146.

6″ Field Range Finder

AN EXTREMELY useful instrument for easily and quickly measuring distances from 8 ft. to 100 ft. — especially distances to inaccessible objects and places, the Range Finder has a 6″ base — easily carried in pocket. Speeds work on many projects; erection and maintenance of utility wires, mapping and surveying; or any ground or aerial measurements. Saves time and money in speeding up outdoor construction and maintenance work.

Operation of the Range Finder is based on coincidence of two images: one image is seen in its natural color and the other image is seen in a strongly contrasted gold color. Upon sighting through the eyepiece both images will be seen. By turning the knob the white image will move either toward or away from the gold image. Knob is turned until the two images coincide perfectly — image will suddenly appear to be sharp, clear and strongly contrasted. When this occurs Range Finder is in perfect alignment. Operator simply reads distance to the object sighted on dial. Accuracy assured within 2 per cent — For complete data, *Check New Product* 147.



New 6″ Field Range Finder.

New "Low-Ohm-Meter"

A NEW OHMMETER, which features accurate measurements of low resistance values and utilizes low circuit currents, has been announced by Simpson Electric Co.

Called "Low-Ohm-Meter," Model 362, the new tester gives readings from 0.1 to 25 ohms with an accuracy of 3 per cent of the full scale value. This accuracy is attained by using the expanded scale of the suppressed-in-

New "Low-Ohmmeter."

finity shunt type ohmmeter. Another feature is its circuit current of only 5 ma maximum, which prevents damage to low-current components and promotes long battery life.

The Low-Ohm-Meter should find wide application in checking wiring connections, contacts, transformers, and other low-resistance components as well as in servicing electric motors and generators.

Model 362 uses one, self-contained battery (type "C," 1½ V) for its power source. Ranges are 0-5 ohms and 0-25 ohms. Over-all size is 3″ x 5⅞″ x 2½″. Price complete with calibrated test leads, is $24.95.

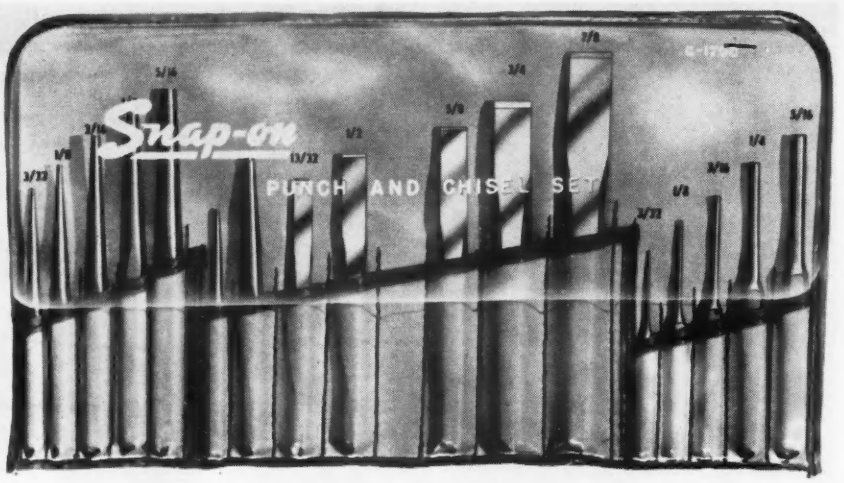
For further information, *Check New Product* 148.

New Punches & Chisels

THESE newly designed punches and chisels are square shaped with beveled corners to provide a more comfortable surface for firm control, greater safety and to prevent tool from rolling out of reach.

Special alloy steel used in the manufacture of the punches and chisels is heat-treated under controlled atmosphere for uniform hardness. Chisel and punch heads are then induction drawn under electronic control to reduce hardness to the proper degree for a controlled mushrooming, long life striking surface. Chisel edges are ground to a 70° angle, which provides fast cutting for all general purpose work.

The new punches and chisels are available from Snap-On Tools Corp.



New punch and chisel set.

in sets consisting of five starter punches and five drift punches 3/32 to 5/16 inches, five chisels 13/32 to 7/8 inches, and two sizes of center punches complete in vinyl-fabric kit bags. Sizes are clearly marked on the bag for convenience. Further information may be obtained by Checking *New Product* 149.

Wheel-Type Ditcher

EXPANDING its diversified line of crawler-mounted and rubber tired, vertical boom and ladder-type ditchers, Barber-Greene Co. has announced its entry into the wheel-type ditcher field with the Model 774 machine.

First introduced to the Public at the 1957 "Road Show" in Chicago's International Amphitheater, the Model 774 is a crawler mounted unit, featuring a 5 ft. 6 inch digging depth and widths, adjustable in 1-inch increments from 18 to 30 inches.

Among the many innovations offered in the Model 774 are: Widespread use of hydraulic power transmission; a unique, flexible connection between chassis and digging wheel; an electric, magnetically actuated overload release clutch and a reversible, hydraulically driven spoil conveyor.

The forward "crowding" speeds on Barber-Green's new wheel ditcher are controlled through the company's patented hydraulic drive. "Hydracrowd," which has been successfully used for a number of years on other ditchers in their line. Using "Hydracrowd," the ditcher operator, by moving a single valve . . . a process as simple as opening or closing a faucet . . . can instantly select from an infinite range of forward speeds from 0 to 28 f.p.m. These speeds are entirely independent of the digging wheel speeds which are controlled, separately, through a mechanical transmission.

Avoiding the conventional, rigid connection between wheel and chassis, the Model 774 employs a unique, dual, flexible connection which permits a 10° pivot while digging. When especially rough terrain is encountered, or when it is necessary to dig on a curve, the inside connection telescopes, thus avoiding the strain which would be placed on a rigid chassis under similar circumstances.

Power to the digging wheel is transmitted through a single, telescoping drive shaft, equipped with a universal joint at both ends. A floating differential, which raises and lowers with the wheel, transmits power equally and evenly to a double chain drive on the wheel. This is an additional advantage made possible by the flexible chassis-wheel design.

A hydraulic hoist controls the raising and lowering of the digging wheel.

For complete information on the Model 774, *Check New Product* 150.

WORKING on a sub-contract for a major Mid-Western telephone company, a new Barber-Green Model 774 wheel-type ditcher trenches for the placement of 6-compartment tile conduit.

Service Entrance Mast

A STRONGER, easier to install service entrance mast, featuring "Flash-Plate" as a new component of its Mast Kits, has been announced by Porcelain Products Inc.

According to the manufacturer the

New service entrance mast.

new "Flash-plate," a one-piece combination roof-plate and flashing plus Neoprene collar, improves the original Porcelain Products 2075 Series mast kit.

It provides less parts for easier installation, strengthens the mast, prevents vibration, and gives longer, safer installation. The Neoprene collar that assures lifetime protection against leakage or rusting, fits snugly

and permanently against the dome of the flash-plate, needs no clamps or caulking.

New 2075 series mast kits now consist of one service entrance cap, one flash-plate and Neoprene collar, one conduit support, one offset reducer, pipe mounting wireholders as specified, plus all necessary bolts, nuts, screws, etc. No threads needed on 2″ or 2½″ pipe. For complete data, *Check New Product* 151.

"Reelift"

INCREASED safety and cable reel lifting capacity are provided by the improved "Reelift." Featuring welded construction throughout, the Model RL 31 raises cable reels up to 48″ diameter and 31″ wide. Increased safety factor in design gives protection against injury, damage and breakage.

The "Reelift" measures 48″ high and 23″ by 39″ on the base, weight 85 lbs. For complete information, *Check New Product* 153.

SELF-POWERED TAIL LIGHT: — A unique tail light, powered by its own 100-hour battery, is a new, essential night safety accessory for trailers, wagons, machinery, and equipment hauled by auto or truck. Designed by Burgess Battery Co., the "Trailer-Lite" eliminates necessity of wiring into the ignition system of auto, trucks, and tractors, and guards against nighttime rear-end collisions. Operated by a self-contained switch, the unbreakable red tail light is easily mounted at the rear end of any trailer.—*Check NP 152.*

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BUYERS' GUIDE

ADVERTISING. Directories — *General Telephone Directory Co., 1800 Busse Highway, Des Plaines, Ill.*—[ADV. 1]

BELTS — CLIMBERS — COMPLETE LINEMEN'S EQUIPMENT, *W. M. Bashlin Co., Bashlin Bldg., Grove City 1, Pa.*—[ADV. 2]

BOOTHS—Acoustic Telephones — *Sherron Metallic Corp., 1202 Flushing Ave., Brooklyn 6, N. Y.*—[ADV. 3]

BORING MACHINES, EARTH — *Highway Trailer Co., Edgerton, Wis.*—[ADV. 4]

CORDS, Switchboard (with or without plugs), Instrument (retractable and regular) and Operators — *Commercial Cord & Supply Co., Inc., 26 Main St., Clifton Springs, N. Y.*—[ADV. 5]

CORDS, Switchboard & Telephone — *Runzel Cord & Wire Co., 4727-31 Montrose Ave., Chicago 41, Ill.*—[ADV. 6]

PIPE PUSHERS — *Giant Manufacturing Co., South 6th St., at 12th Ave., Council Bluffs, Iowa.*—[ADV. 7]

POLES, Southern Yellow Pine — *Taylor Colquitt Company, 217 E. Main St., Spartanburgh, S. C.*—[ADV. 8]

POLES, Southern Yellow Pine — *Texas Creosoting Co., Orange, Texas.*—[ADV. 9]

PROTECTIVE EQUIPMENT — *Reliable Electric Company, 3145 Carroll Avenue, Chicago 12, Ill.*—[ADV. 10]—

REBUILT TELEPHONES & SWITCHBOARDS — *Telephone Repair & Supply Company, 1760 Lunt Avenue, Chicago 26, Ill.*—[ADV. 11]

WIRE, Insulated — DATED DROP WIRE — Neoprene or Weatherproof — *Alphaduct Wire & Cable Co., New Brunswick, N. J.*—[ADV. 12]

WIRE, Insulated Drop and Bronze of Copperweld — *Acorn Insulated Wire Co., Inc., 36 Freeman St., Pawtucket, R. I.*—[ADV. 13]

SUPPLIERS NEWS BRIEFS

International Harvester Announces "Anniversary Line"

THE CLIMAX of 50 years of motor truck production was marked last month by International Harvestor Co., Chicago, with introduction of a distinctive new "Anniversary Line" of International trucks that ranges from a half-ton A-100 series at 4,200 pounds gross vehicle weight to the heavy-duty cab-forward six-wheel ACF-180 series at 33,000 pounds GVW.

These new Internationals, produced predominantly at the company's Springfield, Ohio, plant, comprise the "light" portion of the company's truck line and offer redesigned high-effeciency truck engines, improved maneuverability, and driver comfort features that include a new cab with the widest inside dimensions of any comparable model, according to W. C. Schumacher, vice president in charge of the company's motor truck division.

"Designated the A-line, the new trucks are available in a full range of four and six-wheel and all-wheel-drive, gasoline and LPG-powered units, in conventional and new cab-forward design. We feel they will receive the same staunch customer acceptance all ready shown other models which have earned us sales leadership in the heavy-duty, six-wheel and multi-stop delivery fields," Mr. Schumacher said.

Mr. Schumacher pointed out that the wide range of engines available in these new models will be of special significance to truck operators. Five gasoline and four LPG-fueled International Black Diamond valve-in-head, six-cylinder engines, each one engineered exclusively for truck use, provide power for the new models. Horsepower ratings range up to 154. The Black Diamond-264 engine, at 154 horsepower, is now available for the A-100 series and other light-duty models.

FIFTY YEARS OF PROGRESS in International motor truck engineering and production are represented by the original 1907 "IHC Auto Wagon" and the modern "Golden Jubilee" light-duty pickup, one of the new International A-line of light, medium and heavy-duty motor trucks. The high-wheeled Auto Wagon's 20-horsepower, two-cylinder air-cooled engine compares with five gasoline and four LPG six-cylinder high-torque truck engines from 112 to 154 horsepower available for the new International models.

"These high-torque truck engines deliver the usable horsepower and performance so necessary for modern light, medium and heavy-duty truck service," Mr. Schumacher said. "From many months of testing, we know that they offer the added advantages of lower initial cost, greater fuel economy, longer life and lower maintenance expense which are inherent in six-cylinder engine design."

Driver comfort, as well as "Action-Styling," has been emphasized in the new A-Line in a number of ways, starting with a lower, wider cowl and including a new 65-inch wide cab that will accommodate three persons in comfort on a seat eight inches wider than in previous models. Standard on all of the International models is a "Sweep-Around" windshield that provides 1,181-square inches of unobstructed visibility. This is the largest glass area of any comparable truck, and has been accomplished while holding to a minimum the pro-

Please turn to page 86

What's *New* about this Guy?

The big new facts about Copperweld* Type M Guy Strand are its economy and its convenience.

Copperweld always has cost less per year of service. Now, this low annual cost is still lower, because prices of every size of the new Type M Guy Strand are lower.

Two Copperweld achievements make this possible:

- First, a special new guy strand developed through Copperweld research enables us to meet tensile strength specifications with smaller diameters.
- Second, new guy strand production techniques appreciably reduce the cost of manufacture.

The new Type M Guy Strand is pliable—easy to handle. It can be readily bent, served, moused or clamped. The time-proved Copperweld process, by which the thick copper sheath of each wire is inseparably molten-welded to the steel core, gives full assurance that the copper will not crack, flake or peel.

Type M Guy Strand is available in 7 strengths: 3-wire strand in strengths of 2.2M and 4M; 7-wire strand in strengths of 6M, 8M, 10M, 12.5M and 16M—and sold in coils of 250, 500 and 1,000 feet. Our field engineers will be glad to tell you about the new economies you can realize through its use.

COPPERWELD STEEL COMPANY
WIRE AND CABLE DIVISION *Glassport, Pa.*
For Export: COPPERWELD STEEL INTERNATIONAL COMPANY, New York

New Copperweld

TRADE MARK

COPPER MOLTEN-WELDED TO STEEL

*Trade Mark

TYPE M GUY STRAND

2.2M 4M 6M 8M 10M 12.5M 16M

jection of windshield into the door opening.

Another cab construction feature is a special five-point outrigger cab mounting that makes riding easier for the occupants through absorption of twists and strains. "Silent-Vent" window ventilator wings provide maximum air movement through the cab with no discomfort and a minimum of noise.

Characteristic of the advanced "Action-Styling" and appearance so dominant in this new International line is the modern Travelall, available in utility, standard and custom models in four series. International's stylists have produced a vehicle six and one-half inches lower in overall height than the previous model . . . longer inside and shorter outside than comparable units . . . that seats eight persons comfortably or carries a half-ton load.

DISTINCTIVE STYLING, a high-efficiency truck engine and greater driver comfort and maneuverability are features of new International medium-duty truck with public-utility body. One of scores of models in the newly-introduced International Truck A-line, the Model A-150 is rated at 9,000-15,000 pounds gross vehicle weight. It is powered by a 141-horsepower International Black Diamond engine with 154-horsepower, 264-cubic-inch engine optional. Design features of the line include a new 65-inch wide cab, which has the widest inside dimension of any comparable truck model, and a new Sweep-Around windshield that offers 1,181 square inches of unobstructed visibility.

Stromberg-Carlson Reports Changes In Telephone Finance Department

A REALIGNMENT of procedures and personnel in the Telephone Finance Department of Stromberg-Carlson, a division of General Dynamics Corporation, was announced last month by Charles W. Pritchard, treasurer.

Two men were added to the department and others were reassigned. Paul A. Altpeter, former asistant controller, was appointed assistant manager for administrative procedures, and Carter W. Eltzroth, Jr., attorney with wide experience in independent telephone financing was named assistant legal counsel.

These additions to the department, which is managed by Phillip J. Lucier, assistant treasurer, were made necessary by the increased volume of loans made by the department to independent telephone companies. Long term loans are now being made at the rate of several million dollars a year, Mr. Pritchard said. They provide funds for all costs of expansion and modernization including buildings and labor as well as central office equipment, telephones, materials and supplies.

About 300 loans have been arranged in six years, ranging in amount from $25,000 to more than $1,000,000. The average loan is about $100,000. Funds for the program are provided by Metropolitan Life Insurance Company through General Dynamic's subsidiary, Stromberg-Carlson Credit Corporation.

The Telephone Finance Department was organized, Mr. Pritchard explained, to handle the rapidly expanding volume of loans and to serve the independent telephone industry better. Because of the unique background of experience acquired by the department in the legal, accounting, engineering and operations problems of independent telephone companies, regular credit work for all Stromberg-Carlson independent telephone customers has been transferred to the department.

G. Warren Schomaker, assistant manager, will devote his time to loans and regular credit, while Mr. Altpeter will take over operational details. Four regional supervisors were named to handle both regular credit and telephone loans in the areas served by the Telecommunication Division's branch offices.

A REALIGNMENT OF DUTIES in the Telephone Finance Department of Stromberg-Carlson, a division of General Dynamics Corporation, was announced last month. Seated, from left, are: CARTER W. ELTZROTH, JR., assistant legal counsel; G. WARREN SCHOMAKER, assistant manager; PHILLIP J. LUCIER, manager and assistant treasurer of Stromberg-Carlson; PAUL A. ALTPETER, assistant manager; GEORGE C. GORDON, legal counsel. Standing, from left, ROBERT H. PHELPS, field engineer; JOHN W. TEGELAAR and EDWARD J. MERKEL, equipment engineers; ROBERT M. MEYERS, LAWRENCE J. CLEARY, HAROLD W. MOONEN and ROBERT G. SLAYTON, regional credit supervisors. Absent is RANDOLPH G. SHOEMAKER, field engineer.

Lawrence J. Cleary will be regional supervisor for the Chicago branch; Robert G. Slayton, Kansas City; Harold W. Moonen, San Francisco and Atlanta; and Robert M. Meyers, Rochester also will serve as assistant treasurer of the Stromberg-Carlson Credit Corporation.

Two field engineers are employed by the department for appraisals and plant engineering for loan customers. They are Randolph D. Shoemaker and Robert H. Phelps. Specifications of central office equipment financed by the program are prepared by John W. Tegelaar and Edward J. Merkel.

George C. Gordon, legal counsel, will be assisted by Mr. Eltzroth, who comes to Rochester from Indianapolis, Indiana, where he was associated with Goodrich, Campbell and Warren for eight years. In this capacity Mr. Eltzroth handled legal work for Stromberg-Carlson and worked with independent telephone companies on financing, rate matters and questions of territorial authority. He is the co-author of the Territorial Authority Act, passed by the Indiana Legislature to provide means of determining boundaries for exclusive telephone service.

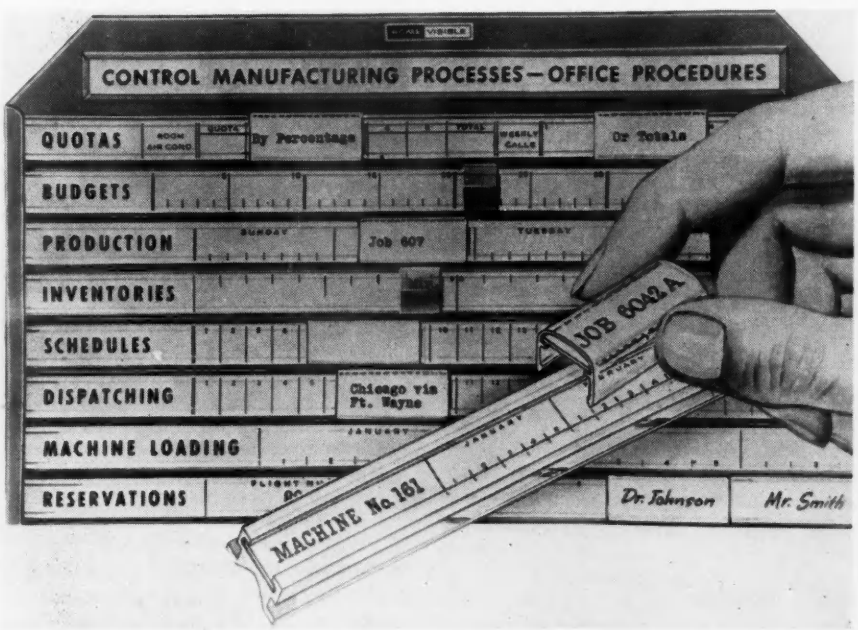
Mr. Eltzroth, a Phi Beta Kappa graduate of Wabash College in 1941, received a bachelor of laws degree from Harvard Law School in 1948. Prior to graduation he served in the Army and received battle stars for five Pacific campaigns. He is now a lieutenant colonel in the Reserves.

Mr. Altpeter brings to his new job as assistant manager of the Telephone Finance Department wide experience in financial matters. He joined Stromberg-Carlson in 1945 and later was named assistant controller. Prior to that he was employed by Bausch and Lomb Optical Company and Stecher-Traung Lithograph Corporation. He is a graduate of Syracuse University and received a master of science degree in finance from American University Graduate School. He is a past president of the Rochester Chapter, National Association of Cost Accountants.

Schauer Manufacturing Corp. Celebrates 50th Anniversary

SCHAUER Manufacturing Corp., Cincinnati, Ohio, last month celebrated its 50th anniversary. The steady growth and progress that has marked Schauer's advance has been attributed to the acceptance of Schauer Rectifiers — battery chargers and eliminators — for telephone and telegraph service.

Originating in a small, one-room shop, Schauer Manufacturing is housed in a modern plant containing 33,000 square feet of office and manufacturing space, located on 10



VISUAL CONTROL PANELS: Lightweight panels containing from 25 to 100 clear plastic tubes (in 17″ and 40″ widths). Tubes are individually removable and easily shifted from one position to another. Easily adapted to practically any kind of control records. Various sizes and colors of signals offer limitless signalling and charting posibilities. For details and descriptive literature, write Acme Visible Records, Inc., Dept. TE&M, Crozet, Va.

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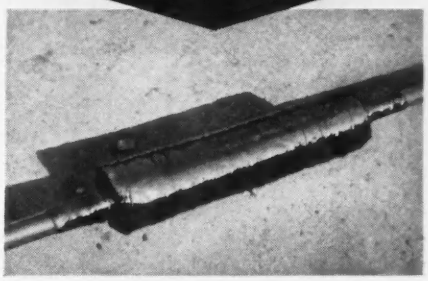

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Lincoln, Nebraska

acres of ground in a wooded, suburban area of Cincinnati. The manufacturing areas are designed to permit straight-line production and assembly of the products of the company's three manufacturing divisions, which, in addition to those mentioned above, include speed lathes and bench grinders for metalworking, and electrical equipment for the automotive service industry.

Lenkurt Electric Opens Washington, D. C., Office

LENKURT ELECTRIC CO. opened sales and engineering offices in Washington, D. C., March 11, to provide increased service to military and civil federal agencies, industrial firms, and other customers in the eastern United States.

Joseph R. Sherman, newly-appointed manager of eastern area commercial relations, is manager of the Washington office. He has been a sales executive with Lenkurt and its former subsidiary, Lenkurt Electric Sales Corp., since 1951. Formerly, he was with Western Union for 10 years in sales and management positions.

John B. Naugle, Jr., is assigned to the Washington office as manager of government and industrial commercial relations. He has been with Lenkurt since 1955 as an applications project engineer and senior commercial representative. Previously, he was with Philco's Techrep Division for five years, serving as a project engineer on Air Force and Navy communications in the U.S.A., Greenland, and the Pacific.

Assisting Naugle will be Paul E. Meier, who joined Lenkurt in 1956 after being associated with North Electric Co. as an applications engineer and General Telephone Co. of Upstate New York as an equipment engineer.

Also locating in Washington is Albert E. Harrison, commercial representative to the Bell System in the eastern region, and Kenneth L. Dumas, applications engineer. Harrison joined Lenkurt in 1955 as a sales engineer after nine years with Pacific Telephone & Telegraph Co. in engineering posts. Dumas has been with Lenkurt since 1951 in development, transmission, and applications engineering.

Plan to Attend USITA's 60th Anniversary Convention, at Conrad Hilton Hotel, Chicago, October 14, 15, 16.

JOSEPH R. SHERMAN

International Harvester Names Three To New Positions

PETER V. MOULDER, president, International Harvester Co., Chicago, has announced a series of personnel changes among the company's top management. Changes in the motor truck division are as follows:

Ralph M. Buzard, formerly manager of sales, motor truck division, was appointed general manager of that division. Mr. Buzard will report to vice president William C. Schumacher, who will conitnue to head motor truck operations.

Louis W. Pierson, former assistant manager of sales, motor truck division, was promoted to manager of sales, succeeding Buzard.

William E. Callahan, formerly sales manager, eastern region, motor truck division, was appointed assistant sales manager in which capacity he will serve along with D. F. Kuntz, whose appointment was announced in 1956.

Commenting on Mr. Buzard's appointment as general manager of the motor truck division, Mr. Moulder said:

"One of the most encouraging things in our business has been the continued growth and success of our motor truck division. It has now reached such size that it is the fourth largest automobile producer in the world.

"This successful record of expansion, which we expect to continue,

has brought with it problems related to increased size and scope of operations. One of those problems has been the heavy responsibilities which have had to be carried by Mr. Schumacher as vice president in charge of that division.

"In order to give Mr. Schumacher assistance in directing the present activities and future expansion of the motor truck division, it has been decided to place under his immediate supervision a new general manager. Mr. Buzard is thoroughly qualified for that new responsibility."

Mr. Buzard gained his early sales experience with International Harvester at Cleveland and Columbus, then was transferred to the general office in Chicago in charge of company retail operations. After serving as manager of the central, northwest and western motor truck regions, he was named assistant manager of motor truck sales in 1946, and was promoted to manager of sales early in 1954.

Mr. Pierson began IH service at Billings, Mont., moved to Fargo, N. D., and headed the Minneapolis and Milwaukee districts before coming to Chicago where he managed the central and southwest motor truck regions. He was appointed assistant manager of motor truck sales in 1946.

Mr. Callahan moved through assignments as assistant district manager at Chicago and at New York City, assistant manager of the eastern and east-central motor truck regions, and manager of the central motor truck region before appointment as manager of the eastern motor truck region in 1954.

EDWARD B. SELIG'S appointment as sales manager, Holtzer-Cabot Motor Division, National Pneumatic Co., Inc., Boston, Mass., was announced last month by James J. Anderson, general sales manager. Mr. Selig joined Holtzer-Cabot in 1953 as a sales engineer for the New England territory and his most recent position prior to his new appointment as sales manager had been assistant to the general sales manager.

The appointment of GEORGE R. BOWERS, JR. as St. Louis Regional manager of the Industrial Division has been announced by Gould-National Batteries, Inc., Trenton 7, N. J. Mr. Powers had recently served as specifications engineer and export manager for Gould in its New York office. He will now serve the eight-state area of Nebraska, Kansas, Oklahoma, Missouri, Arkansas, southern Illinois, southern Indiana and western Kentucky in expediting the selection and servicing of industrial batteries. Mr. Powers is a graduate of Pace College and a Navy veteran. The Gould office in St. Louis is located at 912 Buder Building.

Chase Brass Announces Sales Personnel Changes

THREE MAJOR promotions from within the sales department of Chase Brass & Copper Co., Waterbury, Conn., a subsidiary of Kennecott Copper Corp., have been announced by George B. Moseley, vice president-sales, who said that all changes became effective May 1.

Involved are Leland S. Hanson, eastern regional sales manager who

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To .....
Address .....
City ..... State .....

Sender .....
Company .....
Address .....

A new, more comfortable chair for cashiers and draftsmen

The Sturgis 837

At last, solid comfort and posture support in a "high" chair! Big, soft, foam rubber cushioned seat. Foam rubber cushioned backrest curved to snuggle into the small of the back and give firm support. Footring located for comfort and welded to frame for stability and safety. This chair is available in three adjustable seat heights ranging from 20"-24", 24"-28", 28"-32". Ask your Sturgis dealer to show you the No. 837 High Master. The Sturgis Posture Chair Company, Sturgis, Michigan. Address inquiries to The Sturgis Posture Chair Company, General Sales Offices, 154 East Erie Street, Chicago 11, Illinois.

A Zoologist Writes:
"Every imaginable remedy tried for protection against ticks and chiggers; only Ticks-Off passed the acid test."

STOP INSECT BITES!
PREVENT DISEASE & INFECTION!

TICKS-OFF

More Than A Repellent

SAFE! FAST! Keeps away Chiggers, Ticks, Mosquitoes, Flies. A few second spray protects you all day!

12 Oz. Bombs

Do you know that biting ticks transmit to humans twice the number of tularemia cases than handling or skinning of rabbits.

Distributed by
MINE SAFETY APPLIANCES CO.
201 North Braddock Avenue
Pittsburgh 8, Pa.
76 Branch Offices in the United States

steps up to the position of executive sales director; Charles A. Festge, currently district manager for Chase at Milwaukee, Wis., who will succeed Mr. Hanson; and Edward J. Finn, of the general sales department in Waterbury, who will succeed Mr. Festge as district manager at Milwaukee.

Mr. Hanson, a native of Rochester, N. Y., has been with Chase since 1927. Since that time he has progressed through several important sales posts, including those of sales promotion manager, district manager at New York city for 11 years and, since 1947, eastern regional sales manager.

Mr. Festge, a native of Milwaukee, joined Chase as a clerk in it's Milwaukee office in 1934. Within a few years he was promoted to outside salesman and in 1952 was advanced to district manager at Milwaukee. He served in the U. S. Air Force during World War II, and was honorably discharged with the rank of Sgt. Major. Heretofore the headquarters of the eastern regional sales manager has been at the home office in Waterbury, but Mr. Festge will be located in the new Chase office in Maspeth, Long Island.

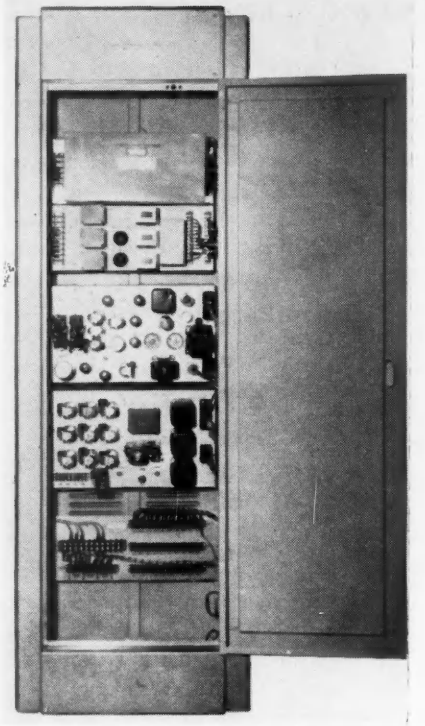
Mr. Finn, a Waterbury, Conn. native, came to Chase in 1941. After four years in a variety of brass mill positions he was transferred to the New York City office, returning to the home office in Waterbury in 1948 where he has been associated with the general sales department ever since.

Du Mont Announces "D D" Mobile Radiotelephone System

THE FIRST completely automatic "dial-direct" mobile two-way radiotelephone system has been made available by Allen B. Du Mont Laboratories, Inc., according to Fred M. Link, director of operations of Du Mont's Mobile Communications Department.

Designed and developed by Ramsey McDonald, representative for Du Mont two-way radio in Indiana, the system allows telephone calls to-and-from vehicles to be relayed, completely unattended, through local telephone systems.

Mr. Link points out that reduced costs to the user, because of the automatic features, greatly expand the potential application of such equipment. Unlike other radiotelephone systems, it operates on a 24-hour basis



FOR interconnection with local telephone company, this Du Mont automatic radio termination equipment is part of installation which automatically transfers radio calls from vehicles to the telephone system and telephone calls to mobile radio systems used in vehicles. Manufactured by Allen B. Du Mont Laboratories, Inc., the complete installation is the first automatic "dial-direct" mobile two-way radiotelephone system and allows phone-calls to-and-from vehicles to be relayed, unattended, through local telephone company operations.

and no manual operators are required.

"Calls are made from a vehicle by simply dialing a number within a local telephone system; also, anyone within that system can call the vehicle in the same manner as when making a house-to-house call," Mr. Link explains. "Only when placing a toll call must the long distance operator be contacted."

The low cost, Mr. Link believes, will open radiotelephone service to the general public, as well as truck and other vehicle fleet operations. Also, the system can be utilized by boats or rural radiotelephone installations in isolated areas.

The system consists of a dial radiotelephone in a vehicle, employing a two-way radio system as a carrier to the local telephone company installation. Also, a transmitter-receiver base station is interconnected with the local telephone system. Termination and switching equipment at the base

SIMPLE DIALING procedure for using completely automatic "dial-direct" mobile two-way radiotelephone system is demonstrated by Du Mont engineer James A. Craig. The system, presently used by the Richmond (Ind.) Radiotelephone Service, Inc., is manufactured by Allen B. Du Mont Laboratories, Inc., and is the first radiotelephone equipment to allow phone calls to-and-from vehicles to be relayed, completely unattended, through local telephone companies. It is explained that calls are made from vehicles by simply dialing a number within a local telephone system; also, anyone within that system can call the vehicle in the same manner as when making a house-to-house call. Only when placing a toll call must the long distance operator be contacted.

station automatically transfers the radio calls to the telephone system and telephone calls to the radio system. Calls can also be made from vehicle to vehicle. Only two telephone lines are required to interconnect the base station equipment with the telephone company's central office. One line is utilized for calls from telephone to radio; the other for radio to telephone.

To illustrate the system's operation, Mr. Link cites Mr. McDonald's use of the automatic radiotelephone. His mobile radiotelephone number, listed in the Richmond (Ind.) Telephone Directory, is 166-53. A party at a local exchange dials 166, and then receives a special radio dial tone. Upon dialing the suffix (53), a signal or call lamp in the car is lighted and a bell or horn sounds. When the telephone handset in the vehicle is picked up, conversation begins.

A call from Mr. McDonald's car is placed by lifting the handset and listening for the dial-tone, produced by normal background noise of the FM receiver. Then by dialing 9, the base station transmitter is automatically activated, and the local telephone system is immediately switched in. After receiving the normal dial tone the local number is dialed directly.

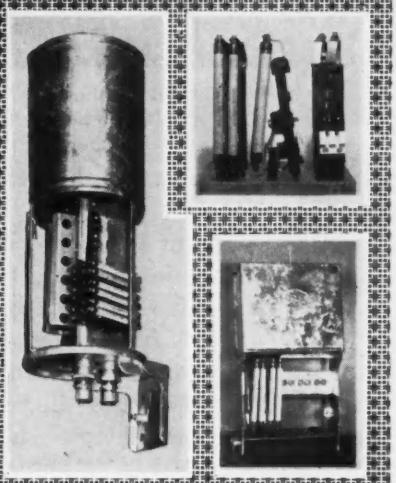
The system presently used by the Richmond (Ind.) Radiotelephone, Inc., headed by Mr. McDonald, provides a mobile radiotelephone service for subscribers in Richmond and surrounding areas. Interconnected with the Richmond Home Telephone Company, Inc., the system has provided "dial-direct" service for doctors, telephone company service trucks, vehicle fleets of the Municipal Electric Power Plant and the Richmond Gas Corp., salesmen, television servicemen, and an auto wrecking concern.

Preformed Line Announces Personnel Appointments

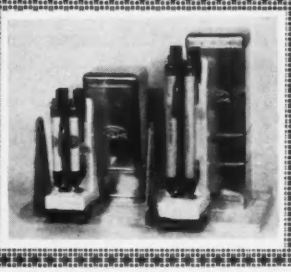
THOS. F. PETERSON, president of Preformed Line Products Co., Cleveland, Ohio, has announced the following personnel appointments: Albert Bonds, Vice-President, operations; Jon R. Ruhlman, vice-president, research & engineering and Paul A. Henderson, treasurer.

Mr. Bonds, formerly vice-president, finance, joined Preformed Line Products Co. in 1948 as general man-

Quality Products Shown in the Suttle Catalogs



Cook protection is just one of the many first-line class of products listed in detail in Suttle catalogs—and always with prices up to date. Always keep the Suttle catalog handy!



S-20V CABLE TERMINALS

Using interchangeable H-20 protector units. No other system provides easier replacement of burned-out protection.

6-LINE U-TYPE PROTECTORS

The handy miniature application of the S-20 principle. Real efficient in congested drop wire areas.

"O" SUB-STATION PROTECTORS

The "O" series—all with "TRUE GAP" dischargers. Provide maximum protection—easy to install.

See Your SUTTLE Catalog

Serving Independent Telephone Men Since 1910

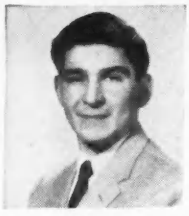
Suttle EQUIPMENT CO.

LAWRENCEVILLE ILLINOIS

construction and maintenance DIGEST

- **Real cool sitting**
- **Easy wedding**
- **Weather defier**
- **"Freeze" frequencies**
- **Beating attenuation**
- **Pennies for power**
- **Look—no tools!**
- **3 ways better**
- **On the inside**
- **Ready to wire in**

Published regularly to help you get the most out of your materials and supplies dollar



by Frank R. Kasper, Inside Sales—Atlanta

At our house, we have a dynamo of atomic automation—she's just under 2 years old and keeping up with her is a big job—but fun. It's just the same keeping up with your needs for supplies: big job—but fun. It's satisfying work to know the parts and equipment I send you—are finest in the world. Why am I so sure they're best? Because they come to you with a double guarantee—the maker's . . . and Stromberg-Carlson's. And along with the protection you get from Stromberg-Carlson's 62-year reputation—you get the promise of new and better telephone equipment from the research program your orders help support. Thanks for the mighty fine business you've given us—we sincerely appreciate it!

Cane-seat chair keeps operators cool, comfortable

Making the operator as comfortable as possible may not strike you as a "maintenance" problem – yet your service is much smoother when the girls are cool and relaxed.

This operator's chair has a cane seat, which is much cooler, cleaner and more comfortable than other types. It retains all the posture advantages for which Sturgis is famed. It is called the Sturgis SC-240.

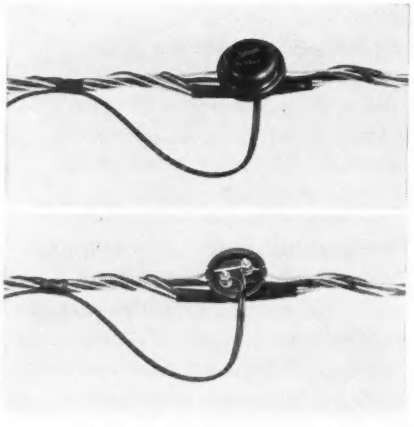
The posture-curved, well-cushioned backrest is covered in genuine leather.

The exclusive Sturgis "Follow-Flex" feature automatically adjusts to the operator's every movement, supports her restfully all the time, discourages fatigue, keeps her at top efficiency.

Other new and welcome features include a plastic-coated steel foot ring which retains its color, and a handy purse holder, available on request. Six seat heights, all adjustable.

Makes Tough Connection Simple

You can greatly simplify the tough unprotected single pair connection between drop or bridle wire, and RD or Urban Distribution wire—with Reliable Wire Terminal No. 5500.



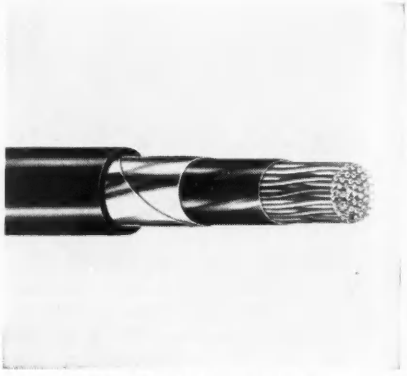
Work-saving wire terminal by Reliable Electric Company

A stainless steel clamp mounts the unit securely on the steel support wire. Neoprene cover snaps securely to make a weather-tight enclosure. The body is rugged molded phenolic, with binding posts and mounting screw molded integrally.

You don't have to cut the RD wire when installing. Simply slip in and terminate.

Gives maximum protection

This cable made by Ansonia Wire & Cable Company offers finer electrical characteristics than any other comparable cable.



Available in 24, 22 and 19 gauge, 11 through 404 pair

To get maximum protection against moisture and weather, specify Ansonia Type 775-P Aerial and Duct Cable.

Its conductors are individually insulated with polyethylene and paired with systematically varying lays to eliminate cross-talk. The cable is shielded with aluminum tape and protected by a tough, plasticized polyvinyl chloride jacket.

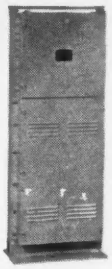
Converter for harmonic ringing stops frequencies from creeping

Cross-ring in a harmonic ringing system can only be prevented when you find some way to nail down each of the five frequencies—16-2/3, 25, 33-1/3, 50 and 66-2/3 cycles.

If you have looked into this problem, you'll be pleased to know that there is a machine that actually does just that – pins down each frequency and **locks** it by a definite ratio to the 60-cycle input frequency.

This machine is the Lorain H-5 Sub-Cycle. It uses a special principle of operation, making it **impossible** for your ringing frequencies to creep out of line.

Add to this the fact that the H-5 Sub-Cycle provides exceptional voltage regulation—preventing ringing troubles—and you have a very useful machine indeed.



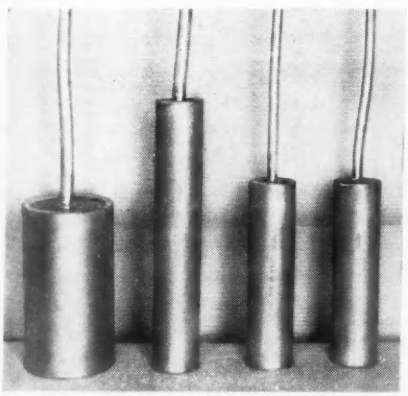
Lorain H-5 Sub-Cycle.

It's economical to operate, too—the H-5 Sub-Cycle has no moving parts, no expendable components. You just install it and forget it. And it requires only 1400 watts power at full load—slightly more than the full load requirement of a 1 H.P. induction motor.

Reduce unit loss by as much as 60%

When you use telephone cables in place of open wire circuits, you're faced with the problem of attenuation resulting from the higher series resistance, higher capacitance and reduced inductance of the cable circuits.

The solution is: telephone circuits with CEECO Loading Coils.



Available with lead or plastic stubs.

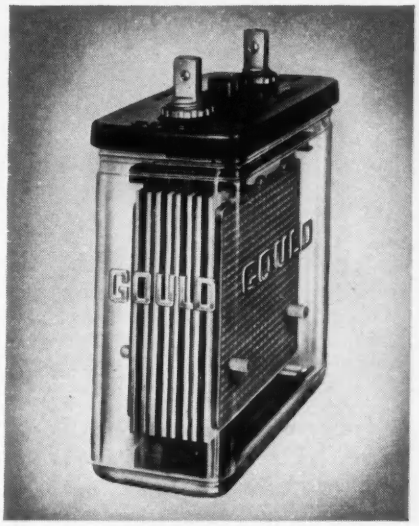
When you apply these coils, you can reduce unit loss to ½ or ⅓ of the non-loaded value. For example, you can make a 24 gauge cable pair as satisfactory as a non-loaded 19 gauge cable pair having three times as much copper.

In addition, with these loading coils made by Communication Equipment and Engineering Company, you can use fewer repeaters, or avoid them altogether by extending transmission range.

Your Stromberg-Carlson representative can offer prompt delivery on your order.

Battery has lowest yearly cost

There's an easy way to save money on switchgear, signal and alarm systems or emergency light and power applications.



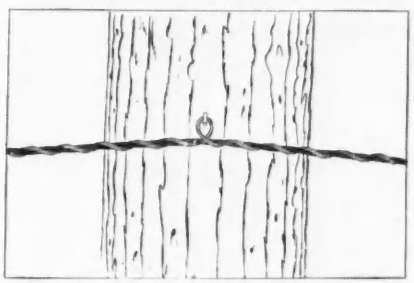
Gould Planté rolls up excellent service records—cuts maintenance to a minimum.

Amazing service records have proved that Gould Planté batteries have the lowest yearly cost of any battery you can use. Pure lead positive plates help make this possible.

For top operating economy, ask your Stromberg-Carlson representative for Gould Planté—the Aristocrat of Stationary Batteries.

Apply these tangent supports by hand

You can make mid-span supports simply, efficiently and at low cost with Preformed Tangent Supports.



Made of stainless steel, with neoprene coating for protection against corrosion and abrasion.

You need no tools to apply these supports. The job is easily done by hand. To install, simply place loop configuration on the wire and then wrap on the legs.

You eliminate cross-talk by giving line wire 10 longitudinal twists, alternating at every other pole.

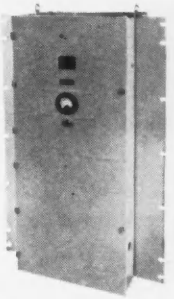
Raytheon Rectricharger® Battery Chargers—Complete Line 3-400 Amperes

Entirely redesigned new Raytheon Rectichargers offer three major improvements:

1. ±1% no-load to full-load stabilization prevents battery overcharging, minimizes gassing, lengthens battery life.

2. No audible hum at output terminals.

3. Most compact units on the market—wall or rack mounted.



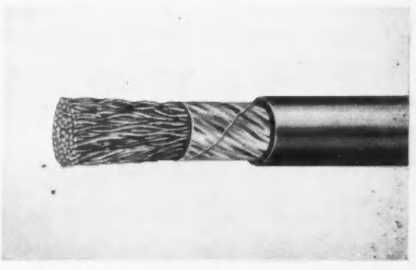
New Raytheon battery chargers feature ±1% no-load to full-load regulation

Automatically compensated for rectifier aging, Rectichargers offer high efficiency, completely automatic regulation. No moving parts and self-protecting circuitry assure minimum maintenance, long life. Single and three phase, 3-400 amps.

Long life . . . low cost

To meet your needs for inside wiring cable, Whitney Blake Company offers Inside "Telecable"—multiconductor paired—with semi-rigid insulation—brown or ivory Plastite jacket. Available in 24 A.W.G. soft bare copper conductors up to 76 pairs and 22 A.W.G. up to 51 pairs.

This inside wiring cable gives long service life because: it is water-resistant; has high resistance to crushing; is unaffected by humidity. The semi-rigid Plastite insulation has far greater compression strength than regular polyvinyl chloride compounds. The resulting long life of the cable means much lower maintenance costs.



Semi-rigid Plastite insulation

(*Continued on Page* 91)

(Continued from page 93)

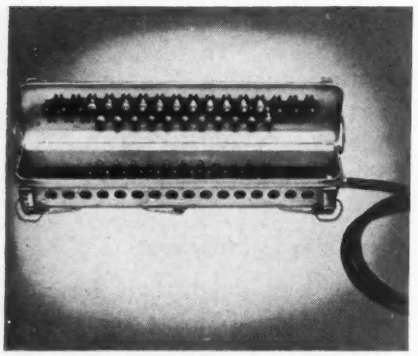
construction and maintenance digest

Inside "Telecable" is light in weight and easy to install. To terminate conductors, simply strip insulation and then solder.

The insulation is permanently colored for lasting polarity identification.

Compact—convenient—weatherproof

You'll find the Cook "Stranterm" strand-mounted cable terminal compact, light in weight, easy to install



Available with lead or plastic stub in 6, 11, 16 and 26 pairs.

and extremely convenient for connecting or changing drops. It's furnished ready to wire in, complete with drawn box and cover of anodized aluminum alloy.

Cook Electric Company's "Stranterm" is the only strand-mounted terminal which can be installed unprotected and later be protected optionally by the insertion of Cook Minigap or Mytigap arresters.

The housing of this terminal is weatherproof. Wide-arc hinges and automatic cover stop make the interior more accessible for servicing.

Fast delivery available from your Stromberg-Carlson representative.

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STROMBERG-CARLSON

A DIVISION OF GENERAL DYNAMICS CORPORATION

Sales Offices: Atlanta 6, Chicago 6, Kansas City 8, Rochester 3, San Francisco

ALBERT BONDS

PAUL A. HENDERSON

ager & treasurer. Previously, he spent 30 years with The American Steel & Wire Co., in engineering and administrative capacities. In his new position, Mr. Bonds will supervise the purchasing and production operations of Preformed's Cleveland and Palo Alto, Calif., plants.

Mr. Ruhlman holds a B.S. in aeronautical engineering from Purdue University and an M. S. from the University of Colorado. While pursuing his masters degree, he majored in structures and vibrations and worked as an instructor, teaching mechanical vibrations. Upon graduation, Mr. Ruhlman joined the Research Staff of the Cleveland Pneumatic Tool Co., working on experimental and analytical studies of dynamic structural problems associated with aircraft landing gear design. Mr. Ruhlman joined Preformed Line Products Co. in 1952 as a project engineer. He was promoted to assistant technical director in 1954.

Mr. Ruhlman was also elected to the board of directors of the company in 1956. He has published numerous technical articles and papers, including co-authorship with J. C. Poffenberger of a recent paper entitled, "Vibration Destruction Testing of Transmission and Distribution Conductors."

Mr. Ruhlman will continue over-all direction of the research and engineering functions at Preformed Line Products Co.

J. R. RUHLMAN

Mr. Henderson received a B.A. degree (Economics) from Hiram College in 1949 and an M.S. in Business Administration from Wharton School of Finance and Commerce in 1950. Concurrent with his last year at Wharton, he was a financial analyst with Provident Trust Co., Philadelphia. In 1951, he became senior security analyst with the National City Bank of Cleveland, and in 1954, Mr. Henderson joined Preformed Line Products Co. as assistant to the president.

He is a member of the Financial Analyst Society of Cleveland, Cleveland Treasurers Club, and Treasurer of First Unitarian Church.

Charles E. Bryan Joins Reynolds Metals Co.

CHARLES E. BRYAN has joined Reynolds Metals Co., Louisville, Ky., as assistant product supervisor for electrical conductors.

Mr. Bryan has served for the past 11 years as chief electrical engineer

with a municipal electrical utility which pioneered in the use of all-aluminum conductors for urban distribution.

He was graduated from the University of Louisville in 1939 with a Bachelor of Electrical Engineering Degree. He served three years in the Army Corps of Engineers during World War II.

His experience also includes three years relay testing and one year generating plant construction with an electric utility.

Mr. Bryan is the author of several papers on the use of aluminum conductors and other subjects dealing with electrical distribution.

Natco Corp. Announces Plans For $2,100,000 Alabama Plant

NATCO CORPORATION, the nation's largest manufacturer of structural clay products, has announced plans to build a $2,100,000 plant near Bessemer, Ala., approximately 12 miles south of Birmingham.

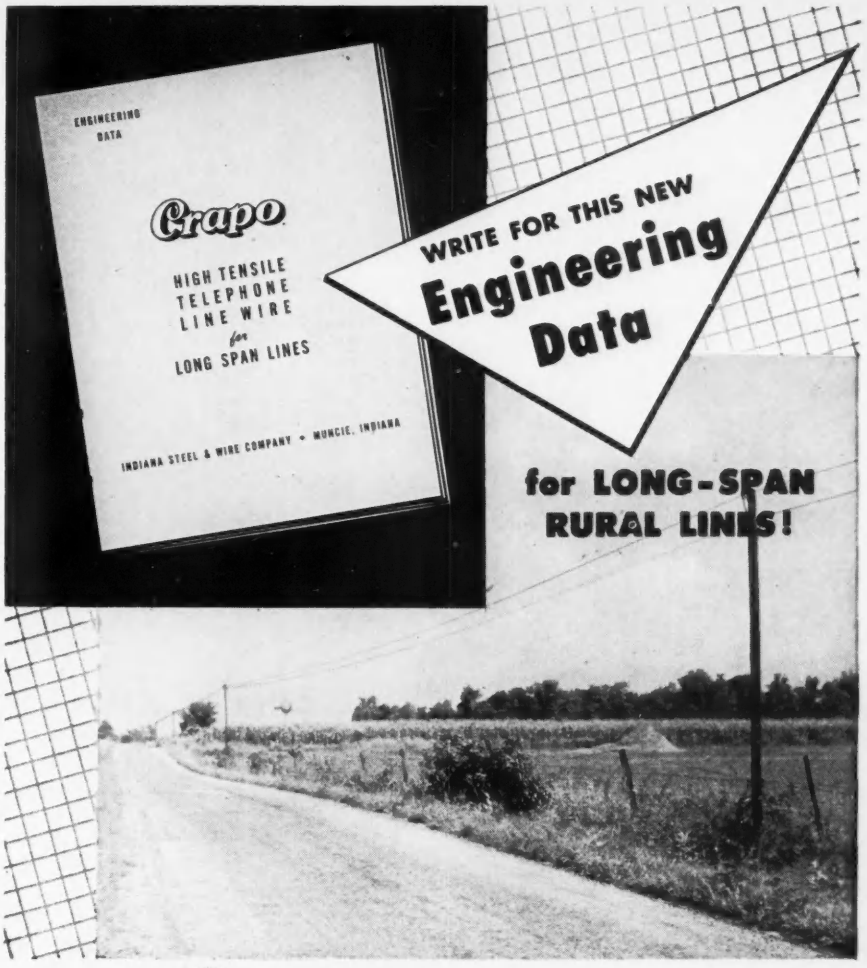
The plant will manufacture clay conduit for telephone, light and power lines, according to R. A. Shipley, Natco president. It will be located in an area where the company has been mining clay for 27 years.

Construction has started and the plant is expected to be in operation late this year, Mr. Shipley reported. He said that Natco has also purchased additional clay reserves in the area.

Devoted to the manufacture of conduit, the new Alabama plant also will be designed to make other clay products. It will be the most highly mechanized clay products plant in existence, Mr. Shipley said.

The new facility will be the first new plant to be constructed in a major Natco expansion program which has been under way since 1946. Under this program more than $6 million has been spent for expansion and rehabilitation of existing properties. In addition, the company has purchased two plants. In 1949, Natco bought its present facing tile and face brick manufacturing plant at Cordova, Ala. In 1954, it purchased its Diamond plant, which makes face brick at Nelsonville, Ohio.

The Bessemer location will be the third Natco plant in Alabama. Besides the Cordova plant, Natco makes face brick at North Birmingham. Nationally, the company operates 15 plants in four states and also one in


ENGINEERING DATA
Crapo
HIGH TENSILE TELEPHONE LINE WIRE for LONG SPAN LINES
INDIANA STEEL & WIRE COMPANY • MUNCIE, INDIANA
WRITE FOR THIS NEW
Engineering Data
for LONG-SPAN RURAL LINES!

SPECIFY *Crapo* HIGH-TENSILE TELEPHONE LINE WIRE FOR LOWER OVERALL COST

Crapo HTL-85 INDIANA STEEL & WIRE CO. MUNCIE, INDIANA U.S.A.
For Medium Long Spans

Crapo HTL-135 INDIANA STEEL & WIRE CO. MUNCIE, INDIANA U.S.A.
For Longer Spans

Crapo HTL-190 INDIANA STEEL & WIRE CO. MUNCIE, INDIANA U.S.A.
For Extra Long Spans

● FEWER pole structures are required where *Crapo* High-Tensile Line Wire is used in building rural telephone lines. This means substantial savings in time, labor and material. There are fewer holes to dig and poles to set, less material to be handled, installed and connected — all of which contribute to lower overall construction costs.

Crapo High-Tensile Line Wire also makes for lower maintenance costs. Its superior tensile strength offers increased resistance to ice and wind loads . . . provides a greater margin of safety. Heavy galvanized coatings assure dependable, lasting protection.

For maximum savings in the construction and maintenance of rural telephone lines, specify the *Crapo* Telephone Wire which best fits your requirements.

LATEST ENGINEERING DATA, including Stringing Sags and Tensions, Staking Tables and Guying Tables for Heavy, Medium and Light Loading Districts, are now available. Write today for your copy of Data Book No. N-53.

INDIANA
STEEL AND WIRE CO., MUNCIE, IND.

WITH MAINTENANCE-FREE PBX

BY USI

Does maintenance take too big a slice of your rental dollar?
Buy the "Gibraltar" of PBX systems. Type 30 PBX by United States Instrument gives years of *repair-less service.*

FEATURES YOU LIKE:	SUBSCRIBERS LIKE:
Relays with long-lasting twin contacts of precious metal.	Busy-lamp field for at-a-glance check of stations in use.
Compact rotary and rectangular motion switches with twin bifurcated wipers.	Trunk calls transferred with push-button ease by stations.
Expands in steps to 15 trunks—100 stations.	Key senders pulse automatically on larger systems.
Parts delivery overnight to most points.	Incoming calls stored and put through automatically.

Write today for our catalogs:

UNITED STATES INSTRUMENT CORPORATION
P.O. Box 33-H, Charlottesville, Virginia

Canada, manufacturing a diversified line of both structural and non-structural clay products. Company headquarters are in Pittsburgh.

Hubbard Names Warne Vice President, Sales

CHARLES C. WARNE, JR., has been appointed vice president in charge of sales of Hubbard & Company's electrical materials and aluminum products. Mr. Warne has been

CHARLES C. WARNE, JR.

vice president and general manager of the company's aluminum products sales and manufacturing operations since 1950.

Mr. Warne joined the company in 1936. He served successively as sales engineer, assistant sales manager, and manager of street lighting sales, prior to heading the aluminum products operations. He is a graduate of Dartmouth College with a Bachelor of Arts degree.

Donald B. Burland has been promoted from methods engineer to production manager of electrical materials and aluminum products manufacturing in the company's Pittsburgh plants. A University of Pittsburgh graduate in mechanical engineering, Mr. Burland formerly was affiliated with Methods Engineering Council and American Bridge Division of U. S. Steel Corporation. He joined Hubbard in 1954.

Biggan & Associates Extends Battery Sales Business

PATRICK J. BIGGAN, long identified as a member of the Waldo E. Bugbee battery sales and service organization, has extended his sales ac-

tivities by opening his own battery business. The new organization, known as P. J. Biggan & Associates, has offices located at 1802 National Building, San Antonio, Texas.

Biggan first became associated with C & D Batteries, Inc., Conshohocken, Pa., manufacturers of industrial storage batteries in November 1955. Intially, he was occupied with railroad battery sales in Texas, Louisiana, and Arkansas. Last October he expanded activities to take in industrial sales of C & D batteries in south Texas.

Anaconda Announces Three Appointments

LAST MONTH Anaconda Wire & Cable Co., announced three personnel appointments: Robert McIlvane named assistant manager in charge of telephone cable sales; P. Howard Farley, manager of contractor sales and Ary Mossiman, manager of market research.

Mr. McIlvane, a graduate of Georgetown University, joined the Copperweld Steel Co., of Glassport, Pa., upon the completion of his service duty, and was concerned with the special products and utility sales division. For the past few years, he has been active in the telephone cable field in development and sales capacities. He will now continue in a similar capacity for Aanaconda.

Mr. Farley spent over three years with the National Electrical Contractors Association, as sales promotion manager and director of marketing service. Prior to this, he had spent a number of years with the Westinghouse Electric Corp., in Dallas and Pittsburgh. He is a member of the Inter-Industry Co-ordinating Committee and the Adequate Wiring Bureau Plan Committee. He also was active in developing the EEI Sales Training course for eelctrical contractors.

Mr. Mossiman, is a former manager of market research for *Electrical World* magazine. Prior to joining the McGraw-Hill publication, he was senior electrical designer at Ebasco Services in New York. He is a member of the electrical engineering faculty of Pratt Institute Evening School of Science and Technology.

Mr. Mossiman will handle market research functions for Anaconda Wire & Cable in the utility and associated electrical branches of the industry.

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These plus many other benefits mean that in the telephone field, C & D is—

Your better battery buy!

Literature available

Write for complete description and specification in C & D PlastiCell Bulletin T-527

C&D BATTERIES, INC.

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SINCE 1906

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THE CLEARING HOUSE

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HELP WANTED: Traffic Superintendent for operating company with over 100,000 telephones — 97% dial. 9 toll centers all with operator toll dialing. Subscriber direct distance dialing equipment to be placed in service at one toll center in July. State age and experience to: William C. Henry, Pres. & gen. mgr., Northern Ohio Telephone Co., Bellevue, Ohio.

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FOR SALE: Stromberg-Carlson Switchboard. Price $1500. Write. Mrs. Lizzie Ott, Arcola Telephone Exchange, Arcola, Mo. Phone 28.

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4 amp. 3 cells

Your end cells deserve the same careful, gentle treatment that a FLOTROL gives to your exchange battery. Be sure they get it by installing a FLOTROL End Cell Charger. Its cost is a small fraction of the cost of your installation, yet its maintenance of your end cells can be a deciding factor in maintaining service to your subscribers during a commercial power failure. Models available for two, three, and four cell batteries in current ratings from 3 amperes to 20 amperes. FLOTROL chargers for 12 volt engine starting batteries are also available in ratings from 3 amperes to 20 amperes.

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PARTNERS IN DEPENDABILITY
SUB-CYCLE

Chester Robbins Joins Lenkurt Electric Co.

CHESTER M. ROBBINS, veteran of almost 40 years in telecommunications, has joined the Commercial Relations staff of Lenkurt Electric Co., San Carlos, Calif.

Before going to Lenkurt as a consulting engineer, Mr. Robbins was a staff systems engineer with the Air Defense Command, Colorado Springs,

CHESTER M. ROBBINS, veteran telephone man, has joined Lenkurt Electric Co., San Carlos, Calif., as a consulting engineer.

Colo. In this position, he participated in original planning and implementation of the SAGE (Semi-Automatic Ground Environment) system of air defense communications. One of the largest single microwave installations in the system was established under his engineering guidance.

As assistant engineer with General Telephone Co. of Illinois from 1948 until 1953, Mr. Robbins worked on toll network and outside plant transmission problems. His experience also includes 20 years transmission work with AT&T Long Lines in Illinois and Pacific Telephone & Telegraph Co. in Oregon. He began his career in telecommunications with Postal Telegraph and later was with Western Union.

He is a member of the AIEE, Independent Telephone Pioneer Association, Armed Forces Communications & Electronics Assn., Society of American Military Engineers; and is a senior member of the IRE. In addition, he belongs to the Pike's Peak Chapter of the National Society of Professional Engineers and the American Association of Engineers.

STROMBERG-CARLSON

Transmitter

A DIVISION OF GENERAL DYNAMICS CORPORATION

News and views of Independent telephone people. VOLUME 6, NO. 2 ● MAY 1957

First call at Aledo XY Dial exchange was made by Mr. J. A. Gubanich, secretary-treasurer of parent General Waterworks Corporation, as (l-r) W. J. Pfaender and M. T. Bolluyt of Stromberg-Carlson stand by.

Aledo, Illinois, impresses visitors

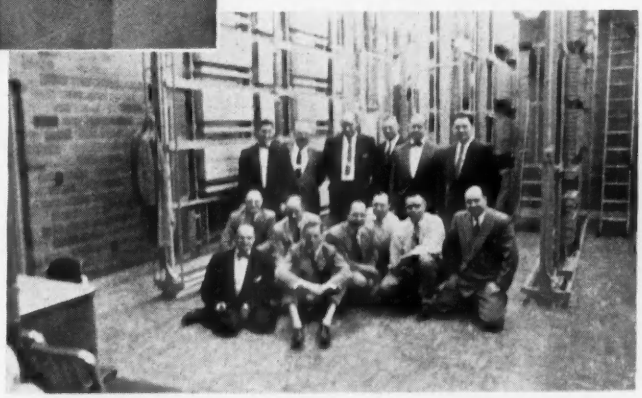
Perhaps the good citizens of Aledo, Illinois, were too preoccupied with their own interests in the new XY Dial System cut into service this winter to notice the influx of telephone executives whose concern in the cut-over was equally personal.

Mr. C. R. Bell, district manager of the Western Illinois Telephone Company, and Mrs. Bell of Aledo were hosts to company officials and visiting managers from Illinois, Iowa, Minnesota and Pennsylvania — all present to salute the company for this further step in a continuing program of modernization.

Heading the group from the New London, Iowa, headquarters of the Iowa-Illinois Telephone Company were Mr. A. W. Sanders, vice-president and general manager, and Mrs. Sanders; Mr. F. C. Anderson, chief engineer; and Mr. C. K. Byers, plant superintendent.

The Minnesota delegation included Mr. Elnathan Gates, president of the National Telephone Company, Minneapolis; Mr. Mark Holmes, Mr.

Everybody was there!

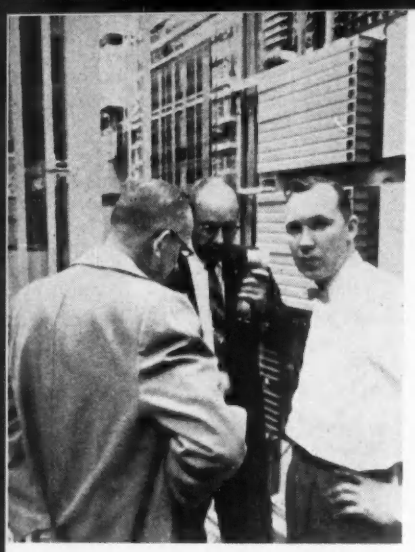


First row: Carl Eichler and Bob Alton of Iowa-Illinois Company.
Second row: Harry Meuqniot and Grant Peterson (both of Iowa-Illinois) Jerry Cornwall (Minn. Telephone Company) F. C. Anderson, (Iowa-Illinois) Dick Hansen (Minn. Telephone Company) A. I. Weisskopf (General Waterworks Corporation)
Third row: Dick Dircks, C. K. Byers, A. Sanders (all of Iowa-Illinois Company) Elnathan Gates (National Telephone Company) Mark Holmes (Minn. Telephone Company) J. A. Gubanich (General Waterworks Corporation)

5 - 4 - 3 - 2 - 1 - Cut !

Left to right (if there is any such thing in this photo): F. C. Anderson, chief engineer, Iowa-Illinois Telephone Company; M. T. Bolluyt, Stromberg-Carlson sales representative; C. W. Bell, district manager, Western Illinois Telephone Company; A. I. Weisskopf, treasurer of National Telephone Company and assistant treasurer of General Waterworks Corporation; Elmer Watson, equipment engineer, Iowa-Illinois Telephone Company. The ladies? They were too absorbed to give us their names.

Continued progress for Iowa-Illinois Company



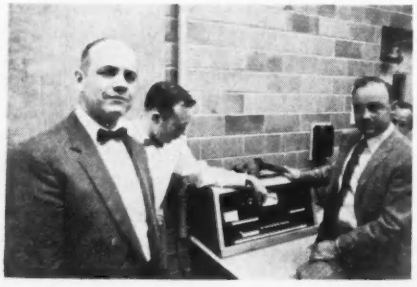
"Want to try it out?" Art Sanders (center) shows an interested visitor how to test a line. "Andy" Anderson (right) is on deck for further questions of a technical nature.

Richard Hansen and Jerry Cornwall of the Minnesota Telephone Company.

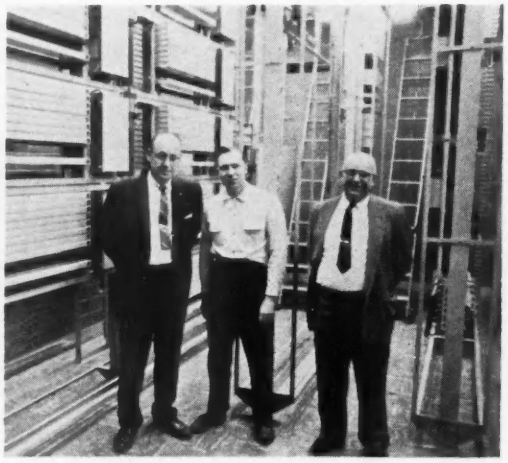
The parent company — General Waterworks Corporation of Philadelphia — was represented by Mr. John A. Gubanich, secretary-treasurer; and Mr. A. I. Weisskopf, assistant secretary-treasurer.

And needless to say, managers of many nearby independent exchanges were in attendance both to extend their congratulations and to evaluate the new dial equipment. A group numbering about 125 attended a pre-cutover dinner at the Oak View Country Club.

The Aledo conversion program began in 1955 and moved forward rapidly after completion of the new office and equipment building in the late summer. The Aledo exchange presently has about 2000 subscribers; is arranged for handling normal growth for many years to come. Installation work was handled by a skilled crew of more than 60 technicians within the organization, experienced in this exacting work by the many XY Dial exchanges already placed in service by this company.



The wire chief's test equipment always attracts the interest of visitors wtih similar operational problems.



This team guided the program to successful conclusion. L-R: A. W. Sanders, general manager, F. C. Anderson, chief engineer; C. K. Byers, plant superintendent — all of the Iowa-Illinois Telephone Company.

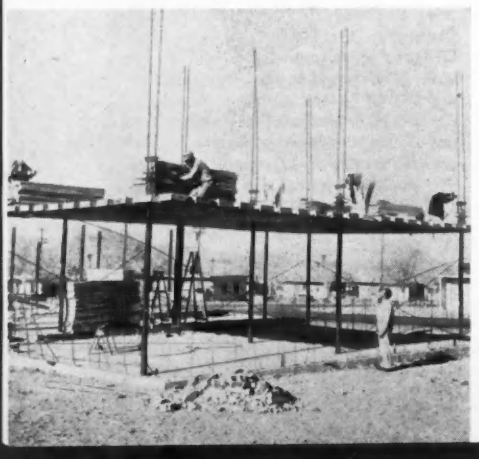
"If you don't mind, I'll shove along."

This ingenious idea cut building cost by 1/3!

The idea isn't new; in fact the photo was given to me by Hershel Trumbo of the Henderson (Nevada) Telephone Company back in 1953 when the Postman's Holiday allowed us to spend a delightful two days in this fabulous city.

Just the other day a customer asked for ideas on exchange buildings, and we sent along some photos. Because these pages are read pretty generally, it seemed worthwhile to give this idea general circulation for whatever it's worth.

Hershel Trumbo found it was worth just ⅓ of his total building costs. Essentially, the scheme entailed pouring a one-piece reinforced slab on the floor, then jacking it up on its supporting columns to form the roof. Workmen next laid up the walls in "cool comfort." Everyone was happy with the project.



Hershel Trumbo, of the Henderson (Nevada) Telephone Company, watches the idea take shape. Want to try it?

"Yes" and "No" Column

Yes — the Stromberg-Carlson factory is closed July 1-14.

No — the Sales offices are not closed at this time.

Yes — some of the sales force may take their vacation at this time.

No — your orders will not be held up waiting their return.

* * * * *

If you're on vacation, have fun! But if you need our services, the Sales offices are open to serve you.

Deep in the Ozarks . . .

Cassville, Mo., starts new era

We're sure Mark Twain would have had an appropriate remark to make upon hearing of the XY Dial installation in the heart of the Mark Twain National Forest.

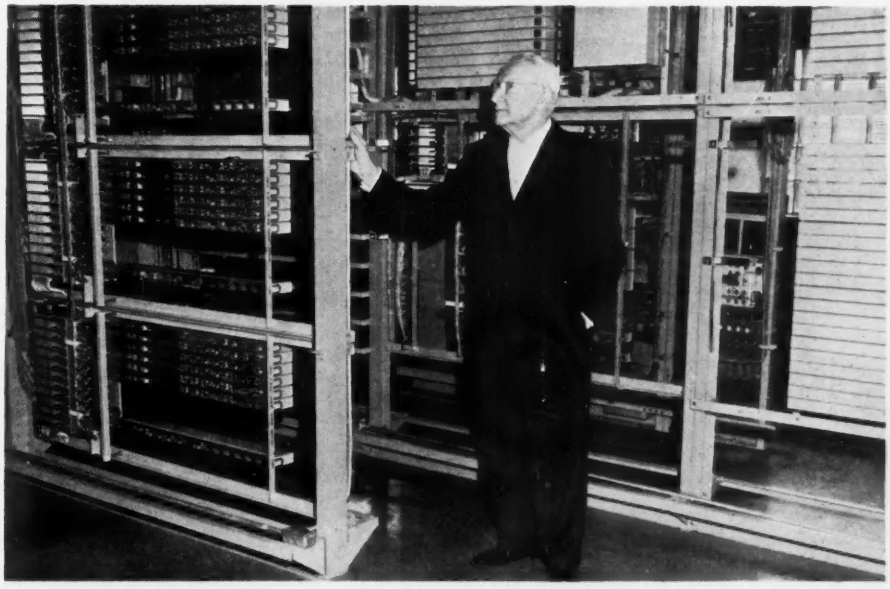
Deep in the beautiful Ozark Mountains in the southwest corner of Missouri, Mr. John A. Holden, President of the Cassville Rural Telephone Company, stands proudly in his new telephone office, recently converted from magneto lines to the present up-to-date XY Dial System.

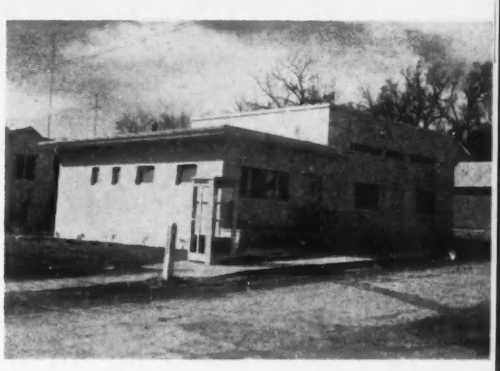
Present facilities are a far cry from the service Mr. Holden "inherited" 33 years ago and certainly different from the first telephone installed in the community by the late Dr. D. L. Mitchell. It was he who later organized a telephone company with the late John M. Bayless.

The first line extended from Cassville to Exeter, about four miles away, for telegraph service in the late 1890's; and the first exchange was located in the old Cassville and Western Railroad Company building, and later moved to the Barry Hotel Building.

Today, amidst such natural attractions as Crystal Caverns, Roaring River, Fairy Cave and Marvel Cave — drawing tourists in ever increasing numbers to this unspoiled section of the state — work is underway for extending service to Eagle Rock, Shell Knob and Cato, all within a radius of about ten miles.

Future plans also include bringing service to the Jenkins community, about 15 miles from Cassville.





Mr. John A. Holden, president of the Cassville (Missouri) Rural Telephone Company, proudly inspects a unit of the newly installed XY Dial System. The 400-line, 1000-terminal office serves this popular resort town located amidst the beautiful Ozark Mountains.

MEET BILL HUDDLESTON

W. R. Huddleston

New to Stromberg-Carlson but not to the telephone industry, W. R. Huddleston, Telephone Sales Representative, will cover the states of Nebraska, Wyoming, Colorado, and the northern half of Kansas. He will replace Bob Leary, who, after several years in this territory, is returning to Rochester.

A native of Lincoln, Nebraska, Mr. Huddleston brings with him a wealth of telephone experience. He started with the Lincoln Telephone and Telegraph Company 15 years ago as a groundman, then became a cable splicer before becoming a commercial representative. He also served as a development supervisor for the Lincoln Company before joining Stromberg-Carlson this Spring.

Add to this, Marine Corp. front line communications — Bill helped string wire while dodging bullets during his three years service — and you have a man who has made telephony his life's work, as have his father and brother.

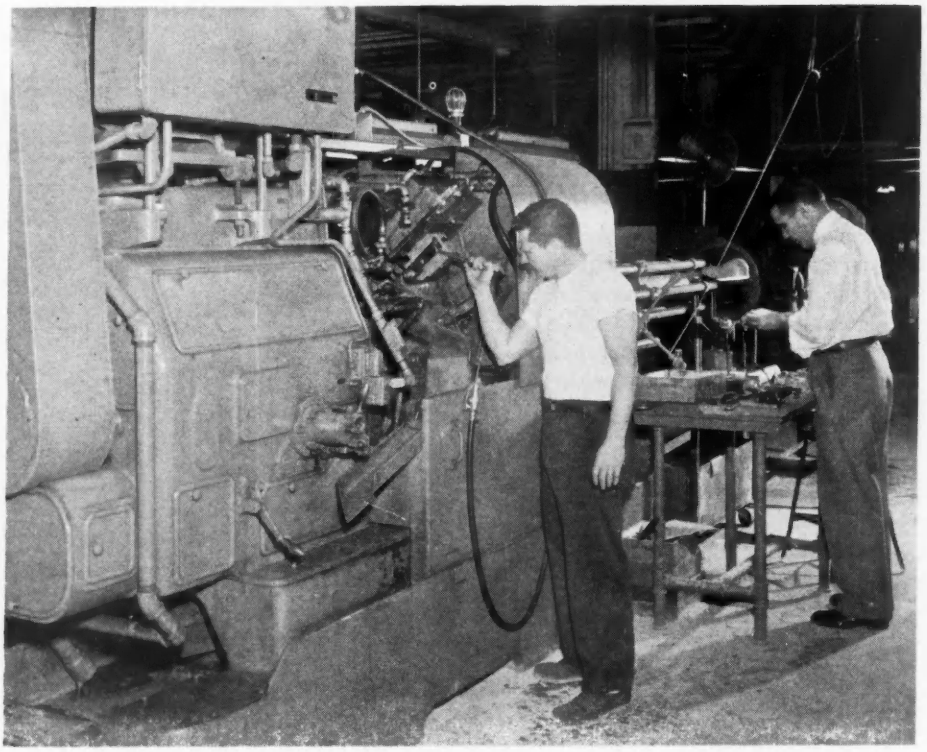
Bill graduated from College View High School, Lincoln, and attended the University of Nebraska. He is married to the former Patrice Hoadley; they have two children: Mark, 6, and Brad, 2, and make their home in Lincoln.

Bill likes to fish and takes Mark along to learn the finer points and help carry the string. Vacations have been family sightseeing tours.

Both Huddlestons are members of the P.T.A. Bill was accepted this February into the Frank H. Woods Chapter, Independent Telephone Pioneers and is active in Lincoln fraternal organizations.

Demand for switching gear mounts:

Teamwork improves production of



Hair-splitting accuracy! Eddie La Rock, set-up man (left) makes final adjustment to cog roller machine as Frank O'Hanlon, Production Engineer, checks tolerances.

"Is there anything we can do to increase production of cog rollers for the XY Universal Switch?" It's Production Manager Howard Strassner talking with Howard Squires, Chief Production Engineer. "What's so hard about producing this small part?"

Squires realized the production difficulties and assigned Seldon (Pete) Brown, engineer on his staff who had lived closest to this problem, the role of coordinator.

Brown knew that most people usually don't give a second thought to the continuing demands made of this critical, close tolerance part *unless* tolerances are off and the wipers it carries into position make the wrong connection. Normally, the cog roller, with its 100 precision-hobbed teeth, goes efficiently about its business: that of moving the wiper carriage first across the face of associated wire banks and then into these banks, thereby establishing the correct connection with the circuit selected.

Close-tolerance cog roller before 100 teeth are precision-hobbed.

Brown also knew that just *recognizing* these facts — these difficulties of production — was not good enough. Something definite had to be done. A team of top engineers was assigned to the job of improving methods of producing cog rollers. Experts in their field: from the materials lab, production, purchasing, tool design, and engineering were called in to make sure that whatever changes were made in improving production did not change the established precision of the part.

This precision had been assured right along as veteran machinists, men with decades of experience in producing parts on hand screw machines, often did what seemed impossible in the step-by-step method of turning out these critical cog rollers.

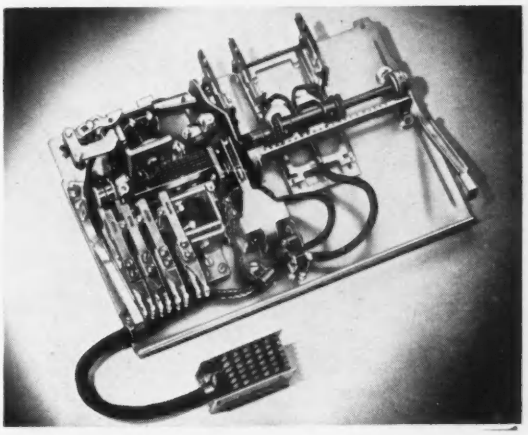
"You can't produce them any faster than you are now and still maintain the rigid tolerances." was the skeptical remark heard.

But the mandate was out; production of cog rollers had to keep up with the increased demand for XY Universal Switches.

Specifications to be met were given to machine design engineers of the National Acme Company of Cleveland, Ohio. One cutting tool needed for production had such rigid specifications, their engineers would not take the responsibility of meeting and retaining the close tolerances. The job was then taken over by Frank O'Hanlon, Production Engineer, who designed the tool for one finishing operation on the National Acme machine, specifically bought for producing cog rollers. This tool was then sent to Cleveland and incorporated into the rugged six-spindle automatic screw machine capable of producing a steady flow of cog rollers which do meet specifications.

Where a cold rolled steel had to be used in the past, now an improved steel containing a small amount of

Cog Rollers



Stromberg-Carlson XY Universal Switch. Cog roller assembly (gear-bearing shaft actuating the wiper carriage) is vital link in correct connections.

lead had come on the market. The Purchasing Department informed Production, which began experimenting with this leaded steel to see if tool life could be lengthened. Production learned that this new material could indeed do the job. The lead, evenly distributed throughout the steel, allows the high-speed drill to cut through the metal with less friction.

Instead of drilling the interior hole of the cog roller in one operation, which usually caused the drill to heat and break, the new machine allowed drilling to be done in six steps. Drilling a little at a time causes less heat and increases tool life. In addition, where the attempt to drill the hole previously in six steps had caused the metal to stretch (about half the thickness of this paper), using six new steps decreased this stretching to within the tolerances allowed in manufacturing the part. Other operations are also performed as the interior hole is drilled.

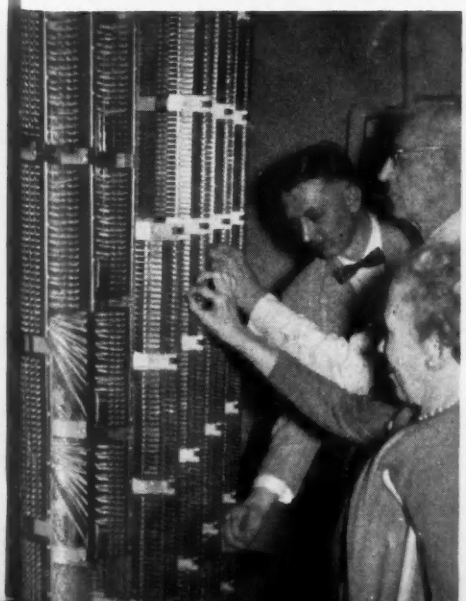
In succeeding steps, about half the depth of the annular grooves are formed, more interior drilling is accomplished, another cutting tool forms the correct depth of the grooves, the interior hole is reamed and finally the cog roller is cut to correct length. The high-speed machine takes 30 seconds to produce one cog roller. As these operations are performed, tolerances as rigid as ± .001″ (about one third the thickness of this paper) are maintained. Before the cog rollers are sent to hand screw machine operations on their way to having the 100 teeth precisioned-hobbed, 14 different instruments are used to check all specified tolerances; the 14th step is used as an added precaution. Other instruments are used again to check tolerances before the cog roller becomes an integral part of the complete assembly. It goes without saying that if any tolerances are found beyond the limits specified, that particular cog roller is immediately discarded.

Hand machine operators, who had always maintained that producing cog rollers was a "dog" of a job (who wouldn't, with drills continually breaking), certainly did not oppose and even preferred to have the new National Acme machine meet demands for XY Universal Switches; they would rather move on to more short-run, non-repetitive jobs, equal to their skill.

Thus, through production research and cooperation between departments, a solution has been found to meet the steadily increasing demands for XY Dial equipment in the telephone field.

XY Dial now serving Madelia, Minnesota

Zero hour at Madelia, Minn. Mary Jeramo, chief operator; Cad Fletcher (center), vice-president; John Osnes, manager.



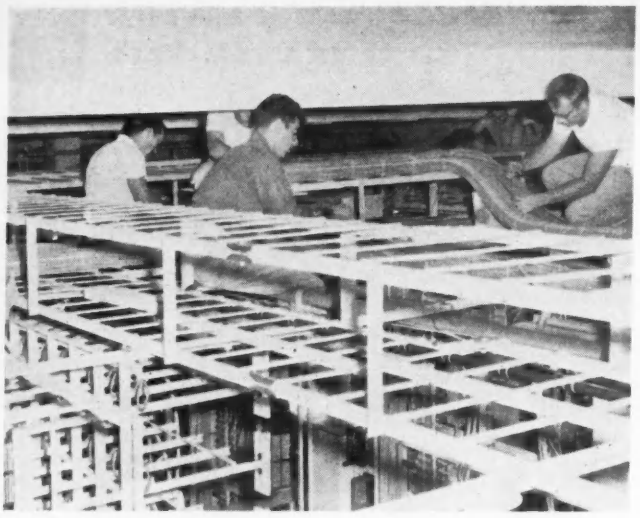
It was a busy weekend late in February when the telephone system at Madelia, Minnesota, was converted to XY Dial service. Busy mainly because practically every man, woman and child in this community of around 2000 people succumbed to the temptation to try out their dial telephones simultaneously. That's happened elsewhere, and the Stromberg-Carlson representatives soon had the situation in hand.

Even as the installation of equipment was in progress, additional subscribers who had been "on the fence" decided to sign up for service; rural lines stretching far out into the rich farming country for which this area is known are rapidly filling up.

A new building of generous size to accommodate future expansion houses the offices and the 1200-terminal dial equipment.

Directors watch first call made by C. E. Fletcher, vice-president of Madelia Telephone Company. L-R: John Osnes, manager; Everett Christiansen, Philip Gunderson, and Claude Christiansen, directors; Carl Hage, president of the board.

Installation foremen ea

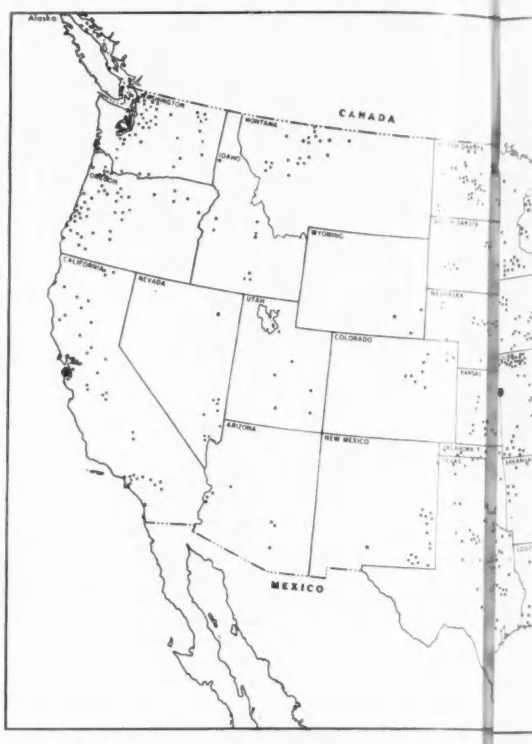


Lacing cable runs in a large XY Dial office. Even where it "doesn't show," pride in workmanship is part of the tradition, bearing out the slogan . . . there is nothing finer.

Chuck Hendricks

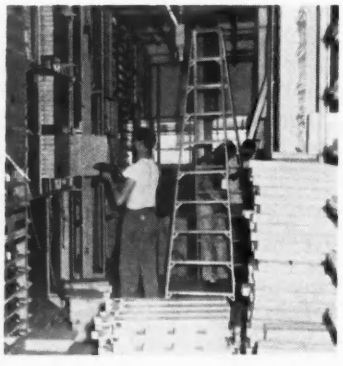
W. A. Thornton

R. M. Smith



It took a lot of good men to put all those exchang the

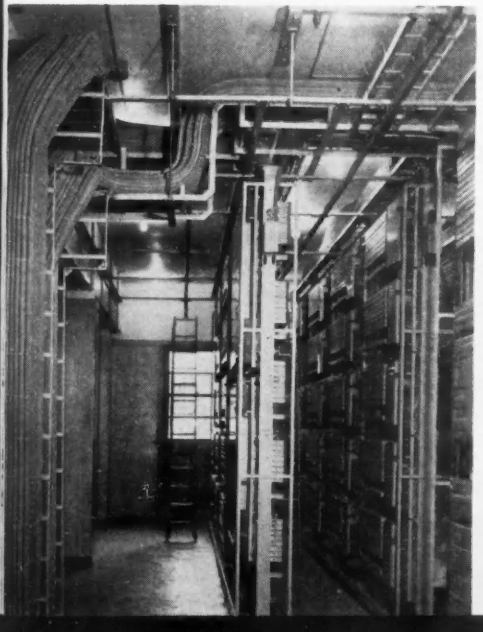
Just keeping track of the mountains of material is a big job in itself. This photo was in a 6500-line office.

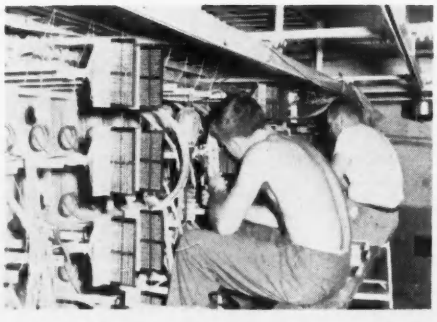


Some of you readers have seen more of these men than we have; others will be seeing them soon. In this series on Stromberg-Carlson installation foremen, we have selected a few of the 100 men now responsible for directing the job of completing the dial program.

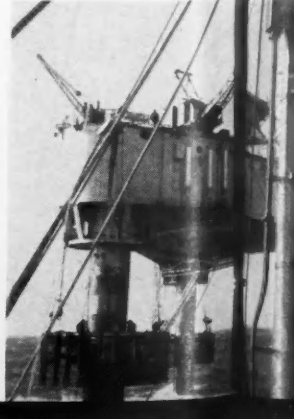
The installation foreman must be many things in one: a skilled craftsman thoroughly schooled in manual arts of the trade; a creative agent who can translate structural steel, wire and switching components into a living communications system. He is the representative of his company in all the personal relationships between his own installation crew and the management of the telephone company. Through him a product, sold for dol-

"When a manager says to a guest, 'I'll be proud to show you my exchange,' we may stick our chests out just a little more."



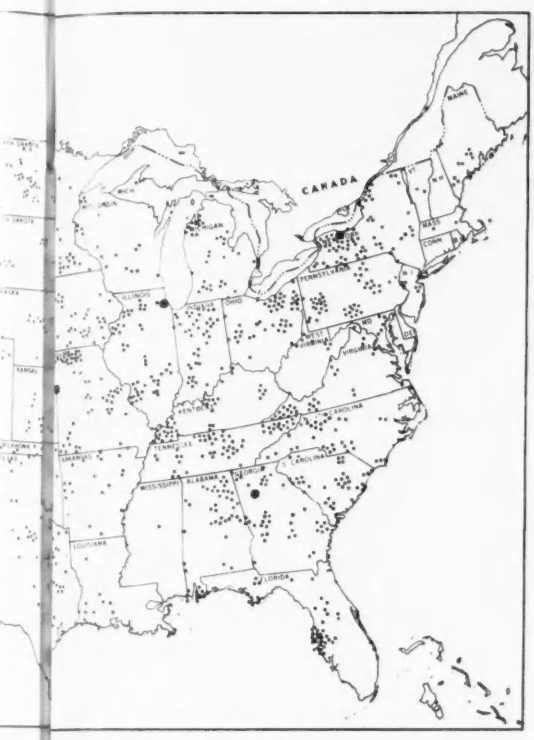


"Sometimes we wonder if we'll ever get our legs straightened out, but that's part of the job that has to be done."



of ntinuing series

ne really get around



xchange the map. (And this is just through July, 1956)

lars and cents, becomes a service of immeasurable value to user and operating group alike.

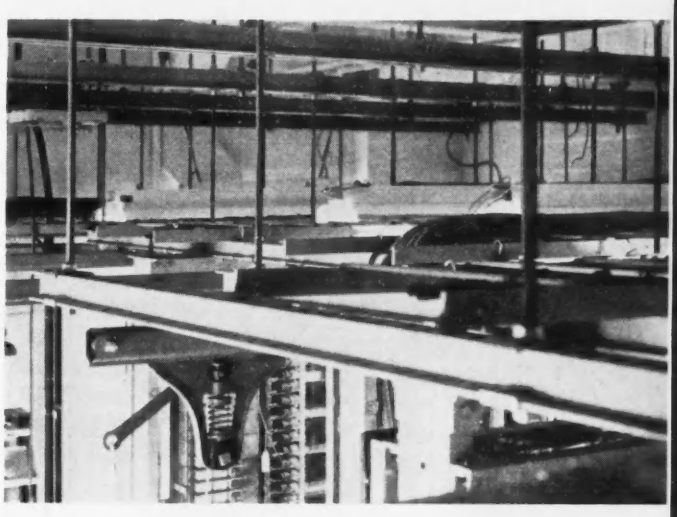
He is also a real person — subject to the same human strengths and weaknesses as the rest of us. For many, the installation experience is a stepping stone to greater responsibilities and rewards. It is hardly too much to say that the majority of Stromberg-Carlson personnel now contacting customers have had this experience somewhere along the line. Some foremen, on the other hand, have so taken to the challenge of the job that they have chosen to stay with it for the long pull.

In future issues we will present other installation foremen — perhaps the men who will be serving you.

Dave Payne

Al Lynch

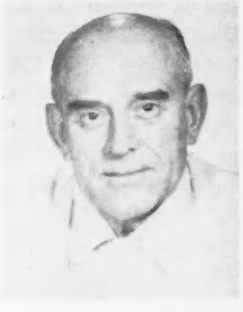
Al Hambric



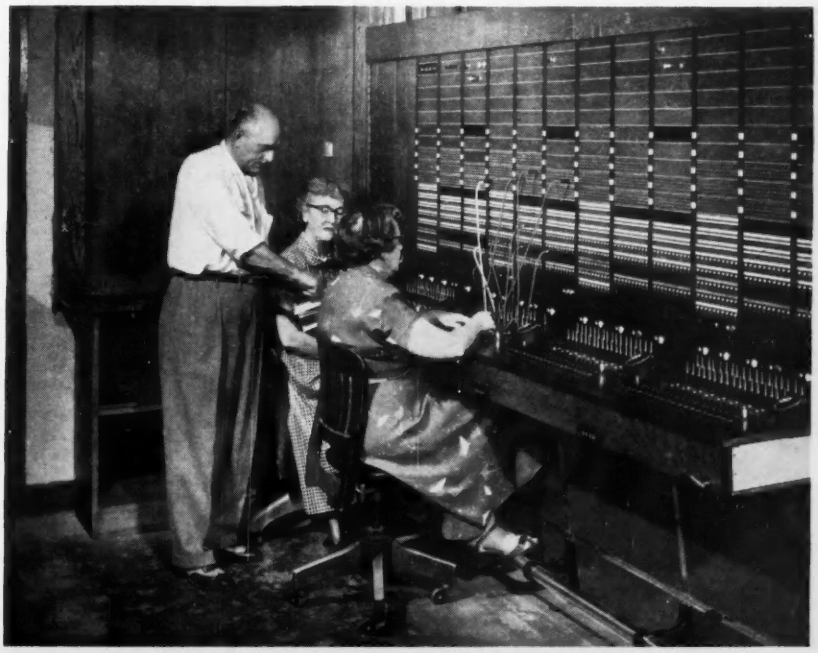
"The impossible takes a little longer." An unusual challenge was presented by this installation, hung from the ceiling.

J. E. Harris

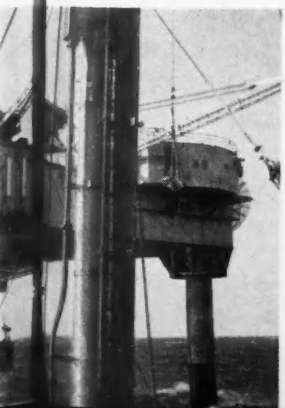
S. Samuels



M. J. Trenton

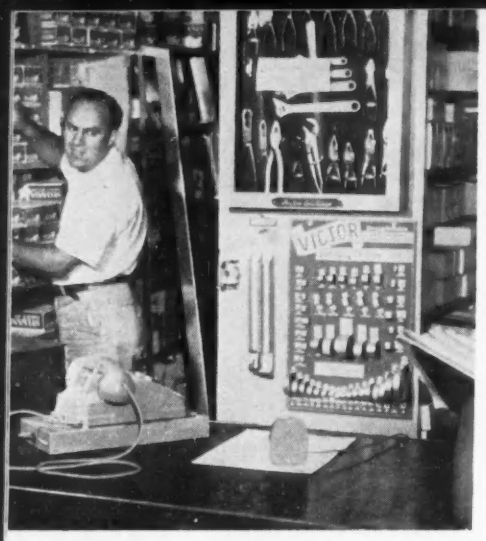


The "dean of toll board installations" gives final instructions to the ladies who are ready to take over.



Atlantic Ocean
'Nuf Said

United of Kansas adopts "Hands-Free" policy



Here's just one of many uses for the convenient Hands-Free Telephone — in parts-stocking depots. Other uses include: doctors' offices, conference rooms, newspaper make-up areas, machine shops, home kitchens.

You've probably heard of the "Hands Off" Policy. This is a variation; people in Fredonia, Kansas, have started a policy of their own, known as the "Hands-Free" policy.

It all began a few weeks ago when Jiggs Naylor of the United Utilities Company, Kansas City, Missouri, and Allen Whitcomb and George Golay of the United Utilities Company of Kansas, demonstrated the versatile Stromberg-Carlson Hands-Free Telephone to subscribers in Fredonia.

The response in Fredonia, as in other communities throughout the United States, was overwhelmingly in favor of the "Hands-Free" policy. Several subscribers immediately took advantage of this convenient way to carry on a telephone conversation — by just pushing a button.

The instrument, a Stromberg-Carlson telephone to which has been added a special sub-base of electronic parts, can be used exactly as a standard telephone. In addition, it can provide two-way conversation even when both hands are completely occupied, through its built-in speaker and separate portable microphone.

The uses customers have found for the Hands-Free Telephone have been many and unusual. In conferences, for example, where a group needs information from an outside source, *all* may hear the same conversation at once and all, within 15 feet of the microphone, may speak with the distant party. This leaves "all hands" free to take notes or look up facts and figures. You may step as much as 15 feet away in any direction and still be heard. In addition, the microphone, which is non-directional, may be moved freely, since it is on a 12-foot cord.

For a loudspeaking call you ignore the handset, using the red "ON" button and the black "OFF" button in place of the hookswitch. A monitor lamp tells you when the speaker and the microphone are operating. All voices are heard through the speaker, and a volume control knob is used to adjust incoming voices to a comfortable level. As you speak into the microphone, the Automatic Volume Control prevents your voice from "booming" — even if you are too close to the microphone.

A microphone cutoff is also provided. By holding the button down, you can prevent the distant party from hearing what is said in the vicinity of the Hands-Free Telephone. The loudspeaker, however, continues to operate, bringing in response from the distant party. To change from Hands-Free to handset, you simply lift the handset. This cuts out the microphone and the speaker, and gives the complete privacy of standard telephone service. This is a valuable feature in case you want to hear something in confidence.

In returning from handset to Hands-Free operation, you simply press the "ON" button, replace the handset, then release the button. This returns both speaker and microphone to operative condition.

Conferences are not the only use for the Hands-Free Telephone. You'll find them in theatre box offices, leaving both hands free to find tickets, write names; in doctors' offices, where the treatment of a patient need not be interrupted; in parts-stocking depots where inventories are usually away from the telephone; in drafting rooms for essential comparison of blueprints; in machine shops, for uninterrupted work; in newspaper offices for quick, accurate gathering of facts; and in the kitchen to permit the housewife to continue meal making while talking.

Actual installation is a matter of minutes, since the Hands-Free Telephone is handled as any other telephone instrument. The only extra step is to plug the power cord into a convenient AC outlet.

Wherever a telephone is in use today, the "Hands-Free" Policy may be put into effect through the practical use of the Hands-Free Telephone. The success of these demonstrations in Kansas has opened up a new field for additional commercial revenue for Independent operating companies.

WELCOME ABOARD!

Anthony L. Carchedi

This April the *Transmitter* quietly passed the five-year landmark. Arriving just in time for the "party" was Anthony L. Carchedi, who will share editorial responsibilities in this and other outside publications of Stromberg-Carlson.

"Tony" Carchedi has lived with deadlines: as editor-in-chief of a weekly newspaper at Utica College of Syracuse University he learned how ghostly white a blank page can look just a few hours before press time! He also has had experience in the more technical approach, as Assistant Advertising Manager of a Utica manufacturing company specializing in refrigeration equipment and controls.

The addition of Tony Carchedi to the publications staff will make it possible to expand the scope of coverage in the various media now being used. It is hoped that some of the readers of these pages will presently have the chance to personally "welcome him aboard."

STROMBERG-CARLSON TRANSMITTER

Published by
The Telecommunication Division
STROMBERG-CARLSON COMPANY
A DIVISION OF
GENERAL DYNAMICS CORPORATION
Rochester 3, New York
GEORGE B. FORBES, *Editor*

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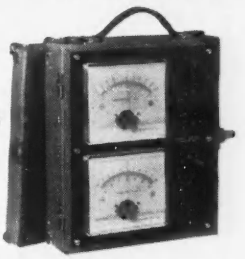

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THE BACK OF THE BOOK

By JOHN G. REYNOLDS

"Out Milking Cows"

LONG DISTANCE operators in an Oklahoma town have a new code answer to add to the "BY" for "busy" and "DA" for "doesn't answer."

Placing a person-to-person call to a connecting company exchange, one operator got an "OMC" answer. "What's that?" she asked. "Out Milking Cows," the other operator replied.

"Good Question!"

THE public telephone system was not restored in Monrovia, Liberia, until 1952, after falling into disrepair during the Second World War.

However, according to John Gunther in *Inside Ajrica*, the system does not extend beyond the city itself. It's impossible to telephone to the airport, 50 miles away. Even the Firestone plantation, virtually the reason for the existence of the city, is beyond the reach of the telephone.

One European official in Monrovia answered his new telephone proudly soon after it was installed. Wrong number.

His Liberian assistant asked him, "If it was the wrong number, why did you answer it?"

"Not For Sale"

THE "Michigan Bell" tells us that when Sears, Roebuck opened a new store at Benton Harbor the ranch-type store featured an elaborate telephone set-up with colored wall phones on pillars about 50 feet apart all over the store. This was fine until various people wanted to know the price of the 'phones. Then things started happening. In fact, Hardware Manager Howard Craig said one woman came up to him with a 'phone in hand, remarking, "I'll take this one." Manager Craig told her he could not sell it; it did not belong to Sears, but the Telephone Company. The woman gasped, "You mean it was connected?"

Verification of this unbelieveable story came from Michigan Bell's Repair Department. They had to reinstall the 'phone the woman had removed . . . What's more the customer was probably disillusioned in her belief that the new store would have *Everything*.

"Listing Complaint"

AN ATTORNEY who has been fighting the Battle of the Bulge turned to page 669 of the new St. Louis, Mo., telephone directory last month and found his name listed as "*Molloy, John F Atty.*"

Molloy suggested in a letter to Southwestern Bell Telephone Co. that "attorney" be designated some other way. He said the abbreviation, when combined with an "F," looks suspiciously like "Fatty."

"This is somewhat embarrassing in my case," he said, but I feel especially sympathetic for attorneys whose middle initial is R."

"Peace — It's Expensive"

LAST MONTH George B. Hines, managing director of the Wisbech, England Bulb Co., proved he is a man who likes peace and quiet in his office — likes it so much so he's willing to pay for it.

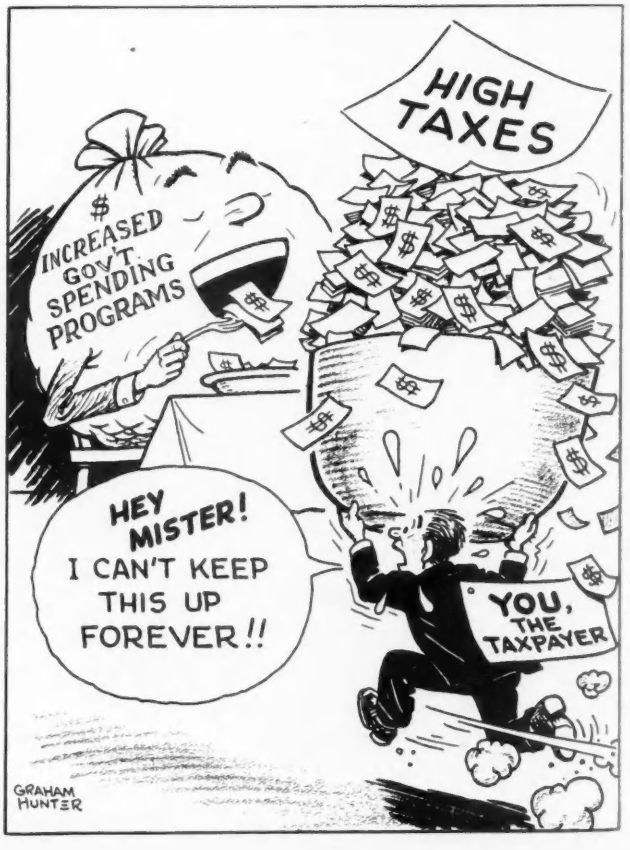
This all came about when Mr. Hines gave each of 36 employes a bonus of $2.80 in their weekly pay envelopes for *not talking on the job.*

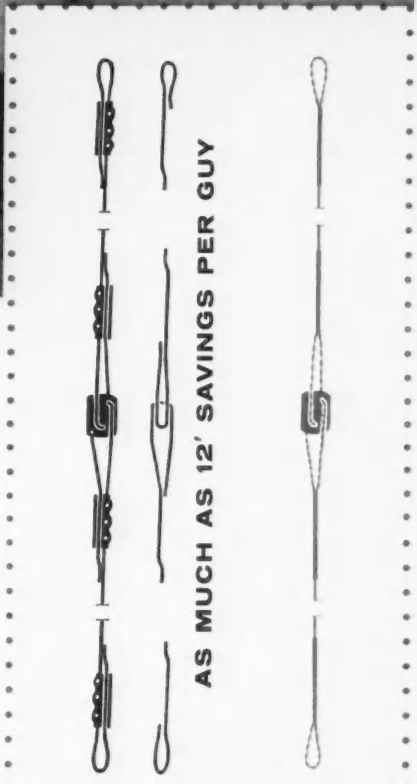
"Short — Shorts"

FOR A TIME last month a Texas supervisor believed she had acquired a new power. The belief started soon after she had corrected an operator, by saying, "You have your feet crossed."

This caused a subscriber (who thought supervisor was talking to him) to reply: "*I know I have, but how in blazes did you know it?*"

TIME TO CALL A HALT!





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